The PHOTOFACT Servicer

NOVEMBER 4, 1946 Robert M. Ellis, *Editor* VOL. 1, No. 8

IMPORTANT INSTITUTE MAILING

We have just had a glimpse of the copy on the new 16-page folder *How to Build a Successful Radio Service Business* and we are really enthusiastic about it. Written by outstanding authorities on radio merchandising and servicing, this new folder explains practical ways of drumming up more trade and building up your business. This folder is on it's way to the printers now.

You couldn't buy a copy of this folder at any price, because it is not for sale . . . but a copy will be mailed *without charge* to each member of the Howard W. Sams Institute. A limited supply of *How to Build a Successful Radio Service Business* is being reserved for late registrants to the Institute. Other important direct mailings are to be made soon. If you have not already done so, become a member today. An application coupon accompanies each PHOTOFACT Folder Set.

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How Much Is Your Labor Worth, Part III

Part III of the popular monograph series "How Much Is Your Labor Worth?" is now available for Members of the Howard W. Sams Institute and will be mailed promptly on request. Because of popular demand we have had reprints made of Parts I and II of this series. Part III explains a method of determining costs if the radio service engineer employs others to work for him.

Knowledge of the business side of servicing is just as essential as knowledge of circuits and technical details. We think these labor cost folders are *must* reading for every independent service shop operator. You should have all three sections . . . write for the ones you need to make your set complete.

The last monograph of this series, Part IV, will be available about December 1st. It will present a method of allocating costs between sales of radios and appliances, sales of parts, and sales of services.

You can't afford to work without making a reasonable profit; and it isn't good business to overcharge your customers. Enjoy the confidence that comes from knowing that you are doing your job right.

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ENTHUSIASTIC RECEPTION

We knew that service engineers wanted and needed information on automatic record changers, but we were hardly prepared for the overwhelming ovation that greeted our announcement of the new, special Automatic Record Changer Folders. The second of these folders is enclosed with this PHOTOFACT Folder Set No. 8, and until all popular types are covered, you will find one with each succeeding issue. As this is written we find that there are twenty-two models in use in post-war combinations, and we now have these scheduled.

To handle automatic record changers properly we have set up a new special department. As is the case with the receiver Folders, the special Automatic Record Changer Folders are prepared from actual production samples—they are not just a rehash of manufacturers' service notes.

After receipt by our laboratory, each record changer mechanism gets a real "shake-down run" in our laboratory. First, they are given a life test of sufficient duration to simulate several years of average wear, then the changers are operated under home conditions to determine what complaints are likely to develop in field service. Finally, each changer is taken entirely apart, piece by piece, and drawings are made of each part.

Thus, the information you get in the Automatic Record Changer Folders represents first-hand knowledge that is passed on to you in a clear, legible and uniform manner to speed your servicing, and to pave your way to greater profits.

A PROTECTED INVESTMENT

Do you realize that PHOTOFACT Folders are the only technical information source that can provide guaranteed accuracy; the only service supplying information that is never obsolete, but always up-to-date? The reason that PHOTOFACT Folders bring you this added value is found in the "ADDITIONS, CHANGES, AND CORRECTIONS" sheet included in each PHOTOFACT Folder Set since No. 6, and which will be included in all subsequent issues.

The radio industry we are in is dynamic, not static; and changes are occurring constantly. We recognize this by bringing you the technical information as fast as it becomes available, so that you will have it when you need it, not months later. Manufacturers make changes in their models to improve performance, or to correct defects. You should know about these changes—they may be very important in the set you are working on. These changes will be brought to you, even though the Folder on the particular set may have been published months ago.

Further, as long as we are human, mistakes are inevitable, although our system of rigid inspection keeps these down to a minimum. We are always appreciative when any errors of omission or commission are brought to our attention. Immediate correction will be made through the "ADDITIONS, CHANGES, AND CORRECTIONS" Folder.

Here are added reasons why you cannot afford to miss the effort-saving help that PHOTOFACT Folders will bring to you.

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ADDED MARGINAL DESIGNATIONS

Effective with PHOTOFACT Folder Set 8, marginal designations will be added to the inside right hand pages of each PHOTOFACT Folder. This will provide an additional convenience, for no matter how a file of PHOTOFACT Folders is opened, the make and model number of the receiver will be visible on the exposed folder. Our draftsmen call the marginal designations "Ear Copy."

This improved labeling is a feature which will be welcomed by every PHOTOFACT Folder User and is in line with our policy of making each issue of PHOTOFACT Folders better than the preceding.

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ACCUMULATIVE INDEX

In PHOTOFACT Servicer No. 5, we told you that a decision had been reached to supply an accumulative index quarterly. Such an index was included with PHOTOFACT Folder Set No. 6; and the next will be enclosed with PHOTOFACT Folder Set No. 10.

We may say that we have given very careful consideration to the idea of supplying an accumulative index with each issue since this feature has been requested by a certain percentage of our patrons. We would like to do this, too, because of our desire that the make-up of PHOTOFACT Folder Sets conform to your desires. There are, however, economic and supply considerations involved (paper is still hard to get) and the issuance of an accumulative index with each Set would crowd out a PHOTOFACT Folder on a receiver. Few of the service engineers with whom we have discussed this problem have wished to pay this penalty.

In one way, we are glad that the decision has been reached not to issue an accumulative index with each PHOTOFACT Folder Set. The availability of such an index would encourage the practice of leaving the Folders in their respective envelopes and making look-ups by the Folder number. This is an awkward and time-consuming procedure.

For example, to meet the requirements of the set on hand, you might need the Folder on the Zenith 6D015—you would never need a 463-24—so why use the Folder number at all? It only complicates things.

File your PHOTOFACT Folders alphabetically by make and numerically by model number and you can find the right one in a jiffy. The table of contents on each envelope is adequate to permit you to inventory each envelope for completeness, and the quarterly accumulative index will give you a check at reasonable intervals for possible misplaced folders.

Good business policy demands a direct, simple approach—the elimination of frills—getting more done with less effort. That is why you use PHOTOFACT Folders; and that is why we want you to file them to the best advantage.

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INSTITUTE NOTES

Valuable New Government Booklets

Consistent with our policy of bringing to your attention literature which will help make your business more profitable, we recommend the following inexpensive new Department of Commerce booklets.

The first of these, "Selecting a Store Location" (August, 1946), Economic Series 56, priced at 20¢, gives detailed information on how to determine the best location for a store.

We quote from the "Foreword" of this booklet:

"Retailers and others have long recognized that being located at the right place is important in determining the success of a store. Although skillful retailers have succeeded in poor locations their sales would have been larger and their profits greater if the location had been more suitable.

"This manual, based on a survey of location practices of successful retailers, is designed to assist new retailers in making proper choice of a location."

The second booklet is "Retail Policies—Their Selection and Application," Economic Small Business, Series No. 57, priced at 15¢.

We quote from the "Foreword" of this booklet:

"The selection of clear-cut business objectives and the formulation of explicit business policies are essential steps in the planning of any type of retail store. In the absence of such policies the retailer tends to dissipate his capital, time, and energy."

If you operate a retail store in connection with your service business, the booklet is a "must" for you.

You can obtain the booklets mentioned above by sending your order and remittance to the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

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KEEP SERVICING PROFITABLE

A patron wrote substantially as follows:

"Please tell me how to install a phase inverter in an old Majestic. The customer will not pay the cost of a new audio transformer because of the age and value of the set."

Off-hand, it would seem to be highly desirable, and good business to substitute a few inexpensive resistors and condensers for the high-priced transformer and presto—the set will be better than ever—or will it?

The writer once heard an hour and a half lecture by a noted radio receiver designer, who went through all the steps of designing a radio receiver on paper. Reasons were advanced for the inclusion of each circuit feature, and the values of all principal constants were determined mathematically. Near the end of the lecture, the famous designer asked the question:

"What is the next step?"

And answered it by saying:

"Make an actual model and then see why it does not work."

Patrons who were custom-set builders in the 30's know how much "fiddling" may be required to make even a well engineered kit set behave. Remarkable indeed was the set that worked the way it should upon initial assembly. Patrons who are connected with the development laboratory of any radio receiver manufacturer are fully familiar with the way preproduction models must be built and rebuilt until the final design may only superficially resemble the original product. The more elaborate the receiver, the more drastic the redesigning usually required. The cost of making the final design is usually many times the cost of making the original sample.

Returning to our patron's request for phase inverter information, we have an analogous situation. It is not hard to derive phase inverter constants; or we can just copy them from the diagrams of receivers that use this feature. But whether the set will work with proper stability after the change is something else again! And if it does, your customer may not like the tone.

But let's suppose that everything has gone well up to this point. We will bet a cup of coffee against a steak at Charley's that if you make a reasonable charge for your labor, the cost to the customer will be more than the cost of replacing the transformer, plus your labor and installing it—and you have lost the honest profit of selling an essential repair component. To alter a receiver without telling the customer is not morally right; and if you tell your customer you have revised the wiring he'll probably get ultra critical and ask for a free service call every time he hears a buzz or crackle.

Seriously, it is our sincere belief that the way to run a profitable repair business is to restore the set to its original performance by replacing defective parts, readjusting the cleaning—no more and no less. Experimentation belongs to the corporation research laboratory, or the work bench of the hobbyist.

If you need assistance, we will do everything possible to help you with a repair. But we haven't the time to tell you how to experiment—and if you are servicing for a living, you just don't have the time to listen.

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STATIC FROM SYNTHETIC RUBBER TIRES

(Continued)

In PHOTOFACT SERVICER No. 6, we quoted a letter from Mr. A. T. Alexander of Galvin about tire static.

Believing you would like to have additional information on the subject we wrote the United States Rubber Company about their anti-static powder.

In their reply, they said:

"We developed and patented this material in 1941 and found very considerable use in eliminating tire static radio interference and greatly reducing shock static complaints.

"We recommend that our U. S. Automotive Static Neutralizer be placed inside the tubes and that the quantity be limited to one tablespoonful. This seems to be enough to completely coat the inner surface of the tube and any excess would be apt to blow out of the tube on deflation or when pressure checks are made. The material is very effective on radio interference from tire static. It seems to equalize the positive and negative charges created by or transmitted to the tire, reducing the total potential available for discharge. Furthermore, it seems to permit the necessary discharges to occur in a steady flow rather than at intervals when the potential has built up to a sufficient level to force the current through the tire.

"At the present time the best means of obtaining this material in small quantities is through the General Motors Parts Division, where there is available an injector and we supply them with the U. S. Automotive Static Neutralizer Powder made up in individual envelopes with sufficient quantity for one tire in each envelope. It is necessary, of course, to treat all four tires. Therefore, these envelopes come in packages of five so that the spare can also be included."

PUBLICATION DATES

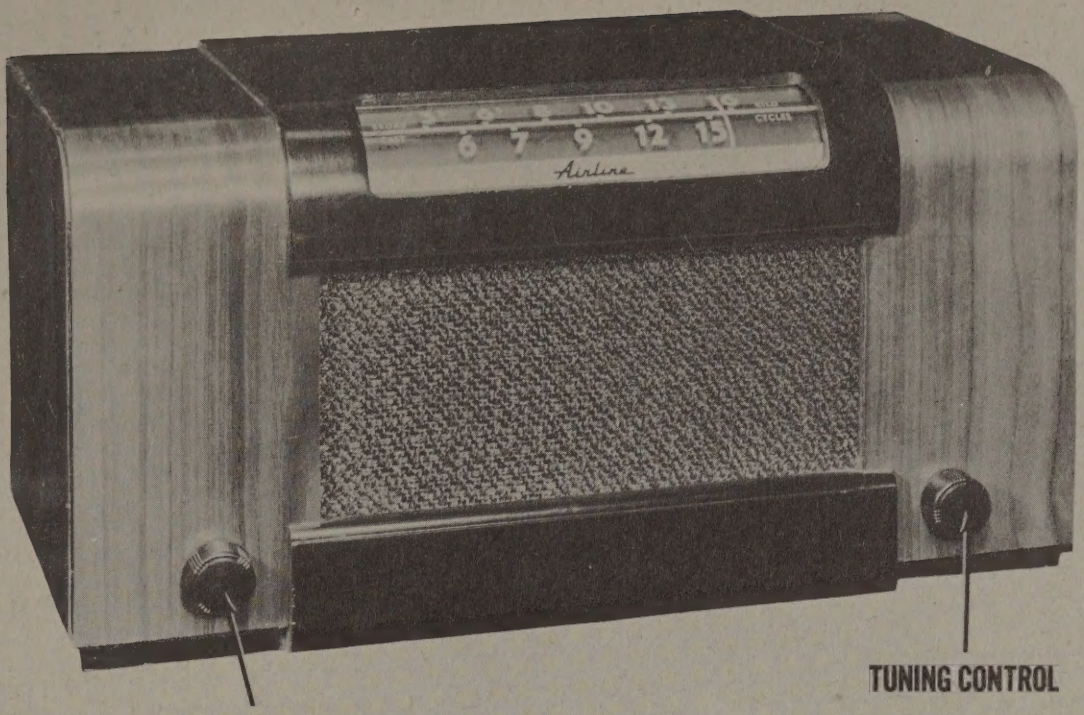
When will other sets of PHOTOFACT Folders be published?

Set No. 9.....December 19
Set No. 10.....December 29
Volume 2—Set No. 11.....January 19
Volume 2—Set No. 12.....January 29

Use the order blank accompanying this set of Folders—address the envelope and send it to your radio parts supply house—they will do the rest.

If you have been unable to get any issues of PHOTOFACT Folder Sets, send your order and money directly to us and we will see that you are supplied.

AIRLINE
MODELS 54KP-1209A, 54KP-1209B



AIRLINE
MODELS 54KP-1209A, 54KP-1209B

AIRLINE MODEL 54KP-1209B

TRADE NAME	Airline Models 54KP-1209A, B.
MANUFACTURER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Ill.
TYPE SET	Battery Operated Superheterodyne Receiver-Self Contained Loop Antenna
TUBES (FIVE)	Types, 1N5GT RF Amp., 1A7GT Converter, 1N5GT IF Amp., 1H5GT Det.-AVC-AF, 3Q5GT Power Output.
POWER SUPPLY	1½ Volt "A" Supply - 90 Volts "B" Supply in pack form (Wards Battery 62-57)
TUNING RANGE—BROADCAST	535-1620KC RATING 300MA @ 1.5VDC & 11.5MA @ 90VDC

ALIGNMENT INSTRUCTIONS

Volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to top cap (grid) 1A7. Low side to chassis.	455KC	High freq.end tuning gang at minimum capacity.	Across voice coil.	A1,A2, A3,A4.	Adjust for maximum output.
.0001 MFD.	High side to ant. wire (green). Low side to chassis.	1620KC	"	"	A5	" " " "
.0001 MFD.	"	1400KC	Tune in 1400 KC signal.	"	A6,A7.	" " " "

HOWARD W. SAMS & CO., INC. • 2924 East Washington Street • Indianapolis 6, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1946 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. A. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc."

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	1N5GT	1N5GT	5Y	
2	Converter	1A7GT	1A7GT	7Z	
3	IF Amp.	1N5GT	1N5GT	5Y	
4	Det.-AVC-AF	1H5GT	1H5GT	5Z	
5	Power Output	3Q5GT	3Q5GT	7AP	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRLINE PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6	16	150	25600	TC45	M-16-150	UT-161	PRS150-16	BR1615	Pwr. Supp. Bypass
7	.005	600	14061	TP408	S-6-005	TC-25	684-005	DT6D5	3Q5 Plate Bypass
8	.005	600	14061	TP408	S-6-005	TC-25	684-005	DT6D5	Audio Coupling
9	.005	600	14061	TP408	S-6-005	TC-25	684-005	DT6D5	" "
10	.05	200	8661	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
11	.05	200	8661	TP426	S-4-05	TC-15	484-05	DT4S5	" "
12	.01	400	8583	TP421	S-4-01	TC-11	484-01	DT4S1	Ant. Coupling
13	.05	200	8661	TP426	S-4-05	TC-15	484-05	DT4S5	Conv. Screen Bypass
14	200	500	14370	MC237	M0.5-32	1FM-32	1468-0002	5W5T2	Audio Plate Bypass
15	50	500	17091	MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRLINE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
16A	500KΩ	1	125367B	MR48	D13-133	M-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 16A per instructions
C	Switch		" "	M27	42	SW-A2	" " " " "

RESISTORS

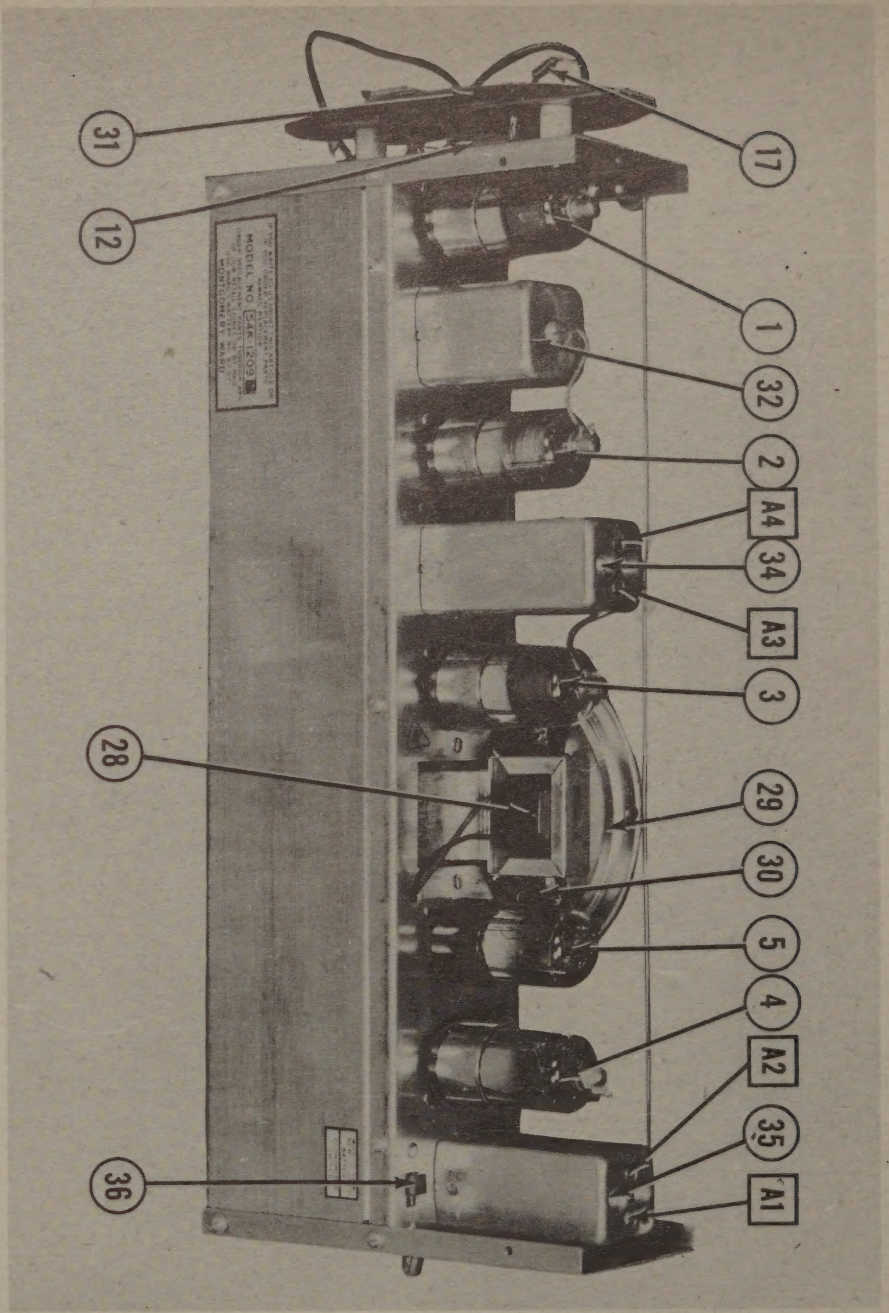
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
17	1000Ω	½	25414	BTS-1000	Br.-Blk.-Red Antenna Loading
18	1 Meg.	½	8766	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
19	150KΩ	½	14616	BTS-150K	Br.-Grn.-Yl. Oscillator Grid
20	33KΩ	½	25144	BTS-33K	Or.-Or.-Or. Converter Screen Dropping§
21	1 Meg.	½	8766	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
22	15 Meg.	½	14365	BTS-15 Meg.	Br.-Grn.-Blue 1st AF Grid
23	470KΩ	½	25042	BTS-470K	Yl.-Vi.-Yl. 1st AF Plate Load
24	2.2 Meg.	½	25134	BTS-2.2 Meg.	Red-Red-Grn. Output Grid
25	15KΩ	½	17164	BTS-15K	Br.-Grn.-Or. Tone Compensation
26	.56Ω	½	25163	Bw-½-.56	Grn.-Blue-Silver Series Filament
27	470Ω	½	25085	BTS-470	Yl.-Vi.-Br. Bias

§Some models use 68KΩ in this application. Replace with 33KΩ.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.	INSTALLATION NOTES
28	11000Ω	3.1Ω	480Ω	.5Ω	25594	A-3879*	T-22547*	*Bend mounting tabs down, file out slots and mount on original bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

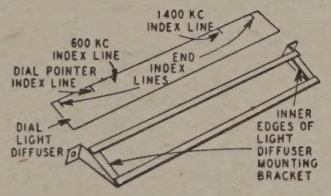
ITEM No.	RATINGS		REPLACEMENT DATA AIRLINE PART No.	JENSEN PART No.		INSTALLATION NOTES
29	FIELD / PM	VC IMP. / 3.1Ω	25593	ST-107† Mod. P5-V		†Drill new mounting holes
30	CONE DIA. / 4-5/8"	VC DIA. / 1/2"	NOT READILY	REPLACEABLE-USE COMPLETE SPEAKER UNIT		

R F COILS

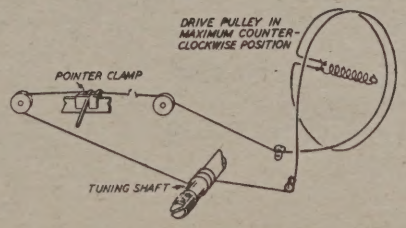
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA AIRLINE PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
31	Loop Ant.	1Ω	2.4Ω	25609		
32	RF Coil	72Ω	6Ω	25597	14-7558	
33	Osc. Coil	8Ω	8.5Ω	25598	14-1040	
34	Input IF	17.5Ω	17.5Ω	25621	16-6658	
35	Output IF	17.5Ω		25622	16-6670	

MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
36	Switch	25319	Economizer S.P.S.T.
37	Tuning Cap.	25592	3 Gang Variable Cap.
	Dial Pointer	25586	
	Dial Scale	25590	
	Cabinet	25591	
	Knob	25696	Bakelite
	Battery Plug	25612	4 Prong

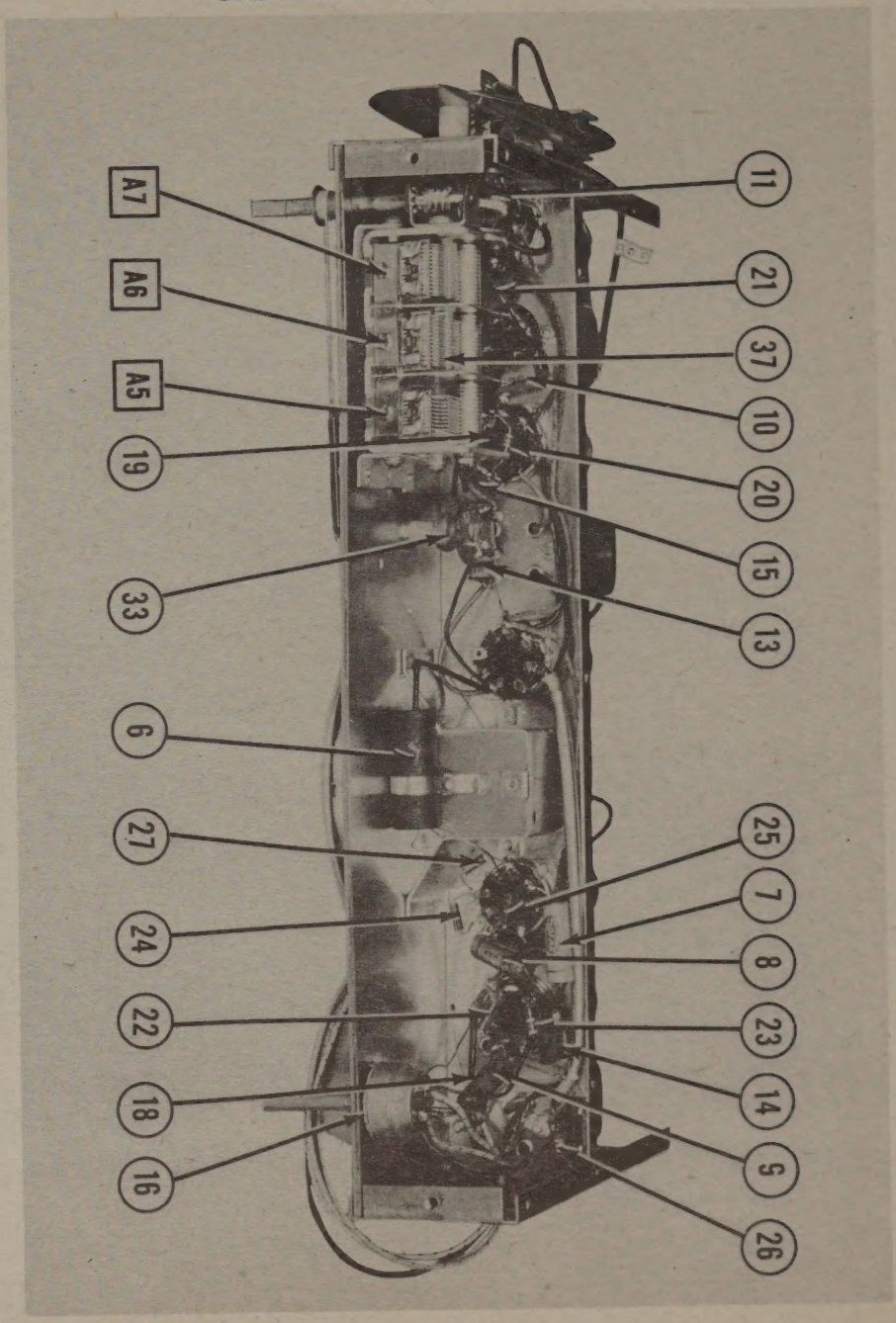

1400 KC INDEX LINE
600 KC INDEX LINE
END INDEX LINES
DIAL POINTER INDEX LINE
DIAL LIGHT DIFFUSER
INNER EDGES OF LIGHT DIFFUSER MOUNTING BRACKET

DIAL CALIBRATION

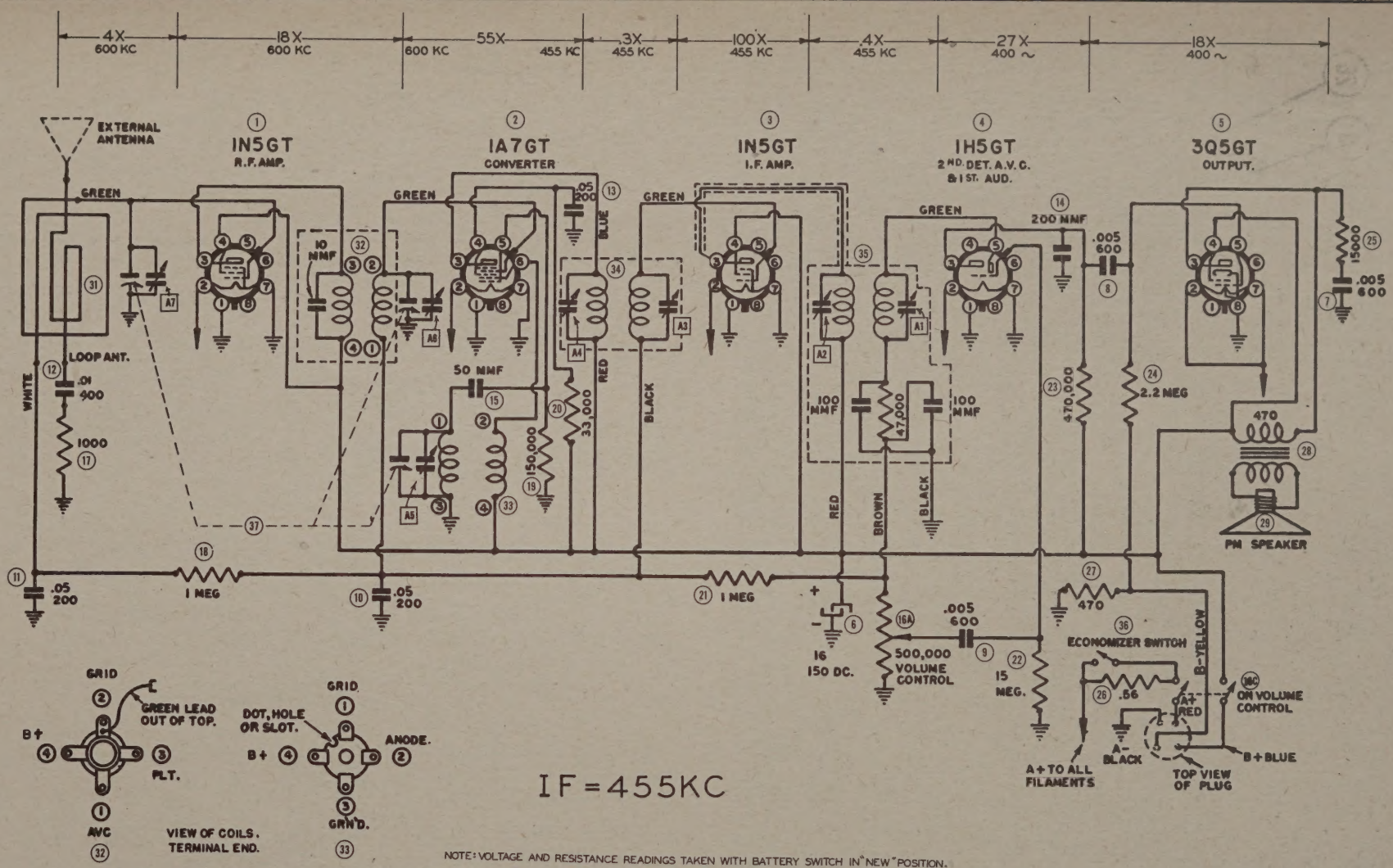


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



AIRLINE MODELS 54KP-1209A, 54KP-1209B



IF=455KC

NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN WITH BATTERY SWITCH IN "NEW" POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1N5GT	0V.	1.45V.DC	90V.DC	90V.DC	0V.	0V.	0V.	0V.	0V.
2	1A7GT	0V.	1.45V.DC	90V.DC	55V.DC	-4.6V.DC	90V.DC	0V.	90V.DC	0V.
3	1N5GT	0V.	1.45V.DC	90V.DC	90V.DC	0V.	0V.	0V.	0V.	0V.
4	1H5GT	0V.	1.45V.DC	67V.DC	90V.DC	-2V.DC	0V.	0V.	0V.	0V.
5	3Q5GT	87V.DC	1.45V.DC	87V.DC	90V.DC	-8V.DC	-5.6V.DC	1.45V.DC	0V.	

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1N5GT	0Ω	*	85KΩ	85KΩ	2.2MEG.	INF.	*	INF.	2.2MEG.
2	1A7GT	0Ω	*	85KΩ	118KΩ	162KΩ	85KΩ	*	85KΩ	1.3MEG.
3	1N5GT	0Ω	*	85KΩ	85KΩ	INF.	INF.	*	1.3MEG.	1.3MEG.
4	1H5GT	0Ω	*	555KΩ	85KΩ	500KΩ	15MEG.	*	1.3MEG.	15MEG.
5	3Q5GT	97KΩ	*	85KΩ	85KΩ	2.4MEG.	395Ω	*	0Ω	

* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

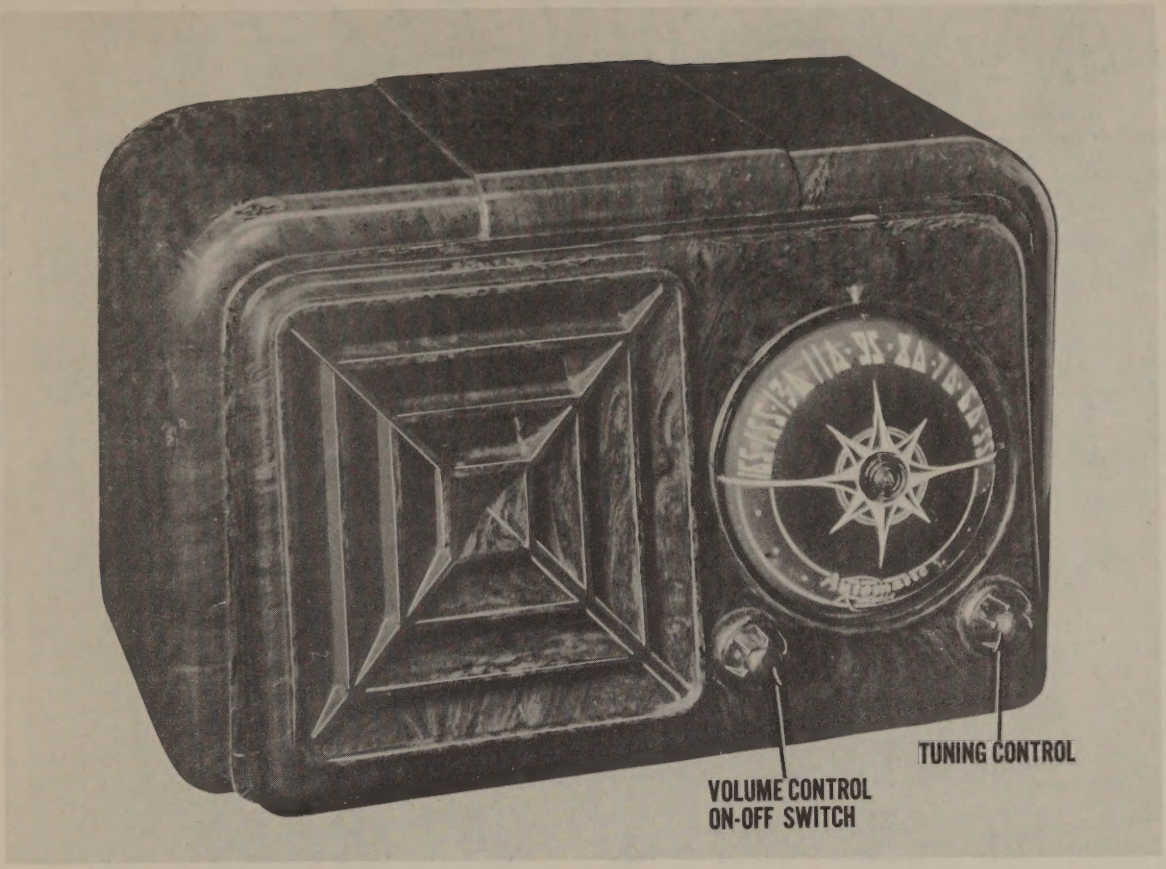
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

468-1

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is grounded.

1. DC Voltage measurements are at 20,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.



AUTOMATIC
MODELS 614X, 616X

AUTOMATIC
MODELS 614X, 616X

AUTOMATIC 614X

TRADE NAME	Automatic Model 614X, 616X
MANUFACTURER	Automatic Radio Mfg. Co., Inc., 122 Brookline Ave., Boston, Mass.
TYPE SET	AC-DC Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types, 12SK7GT RF Amp., 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 35L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	110-125 Volts AC-DC
TUNING RANGE—BROADCAST	538-1685KC RATING .235 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

Use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and chassis. Set volume control at maximum volume and output from signal general no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to stator of rear section of variable. Low side to chassis.	455KC	High freq.end (Variable fully open)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation trans. is not used, reduce dummy ant. to .001 MFD. to reduce excessive hum modulation.
200 MMF.	Connect output of signal generator to two turns of wire and radiate signal into loop.	455KC	Low freq. end (Variable fully closed)	"	A5	Adjust for minimum output.
200 MMF.	"	1685KC	High freq.end.	"	A6	Adjust for maximum output.
200 MMF.	"	1400KC	Tune for maximum output.	"	A7	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: AUTOMATIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12SK7GT	12SK7GT	8N	
2	Converter	12SA7GT	12SA7GT	8AD	
3	IF Amp.	12SK7GT	12SK7GT	8N	
4	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
5	Power Output	35L6GT	35L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AUTOMATIC PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7	50	150		TC-49	M-50-150	UT-501	PRS150-50	BR5015	Filter
8	30	150		TC-47	M-30-150	UT-301	PRS150-30	BR3015	"
9	.05	600		TP415	S-6-05	TC-15	684-05	DT6S5	Line Filter
10	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	35L6 Plate Bypass
11	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
12	.002	600		TP405	S-6-002	TC-22	684-002	DT6D2	" "
13	.1	200		TP428	S-4-1	TC-1	484-.1	DT4P1	AVC Filter
14	200	500		MC237	M0.5-32	1FM-32	1468-0002	5W5T2	Audio Plate Bypass
15	100	500		MC235	M0.5-31	1FM-31	1468-0001	5W5T1	Audio Grid Bypass
16	500	500		MC245	M0.5-35	1FM-35	1468-0005	5W5T5	IF Bypass Diode
17	100	500		MC235	M0.5-31	1FM-31	1468-0001	5W5T1	Osc. Grid Capacitor
18	500	500		MC245	M0.5-35	1FM-35	1468-0005	5W5T5	RF Coupling

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AUTOMATIC PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
19A	2 Meg.	1		MR53	D13-139	M-63-Z	Volume Control- See Note 1
B	Shaft			Not Req.	A	Not Req.	Attach to 19A per instructions
C	Switch			M26	41	SW-A	" " " " "
19A	250KΩ	1	RV-46	UM149	D11-130	M-55-S	Volume Control-See Note 2
B	Shaft		Not Req.	SS-1	A	Not Req.	Attach to 19A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

Note 1 - Used in later production
Note 2 - Used in early production

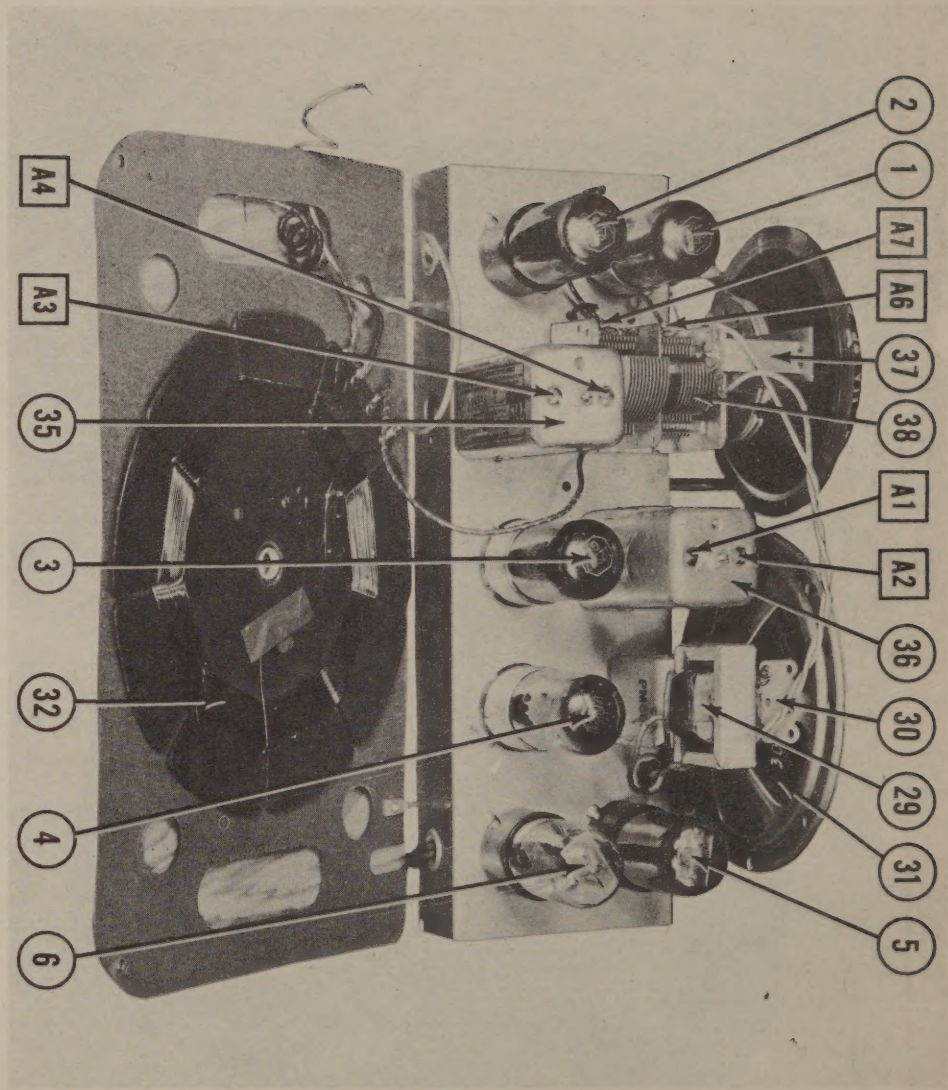
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AUTOMATIC PART No.	IRC PART No.	IDENTIFICATION CODES
20	4000Ω	1		BTA-3900	Yl.-Blk.-Red RF Plate Load
21	390KΩ	½		BTS-390K	Or.-White-Yl. Converter Grid
22	20KΩ	½		BTS-22K	Red-Blk.-Or. Oscillator Grid
23	2 Meg.	½		BTS-2.2 Meg.	Red-Blk.-Grn. AVC Network
24	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Grn. 1st AF Grid
25	240KΩ	½		BTS-220K	Red-Yl.-Yl. 1st AF Plate Load
26	1000Ω	2		BT-2-1000	Br.-Blk.-Red Filter
27	150Ω	1		BT-1-150	Br.-Grn.-Br. Bias
28	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Output Grid

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AUTOMATIC PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
29	1950Ω	3.2Ω	120Ω	.54Ω	Part of PM600	A-3876*	T-22S45*		*Bend mounting tabs down, file out slots and mount on original brackets.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA AUTOMATIC PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-107		
30	PM	3.2Ω	PM600	Mod. P5-V		
	CONE DIA.	VC DIA.				
31	4¼"	½"	NOT READILY	REPLACEABLE-USE COMPLETE SPEAKER UNIT.		

R F COILS

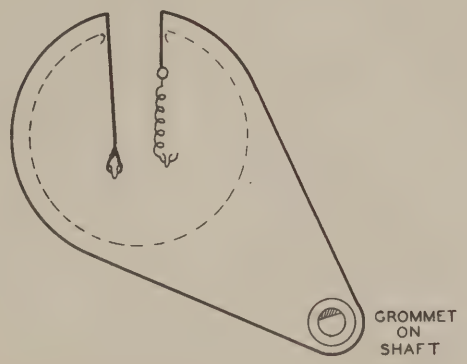
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA AUTOMATIC PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
32	Loop Ant.	.1Ω	1.9Ω			
33	Wave Trap	44Ω				
34	Osc. Coil		5.5Ω		14-1040	
35	Input IF	17Ω	16.5Ω		16-6658	
36	Output IF	21.9Ω	16.5Ω		16-6650	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA AUTOMATIC PART No.		INSTALLATION NOTES
37	Bayonet	6-8	0.15	Brown			Type 47

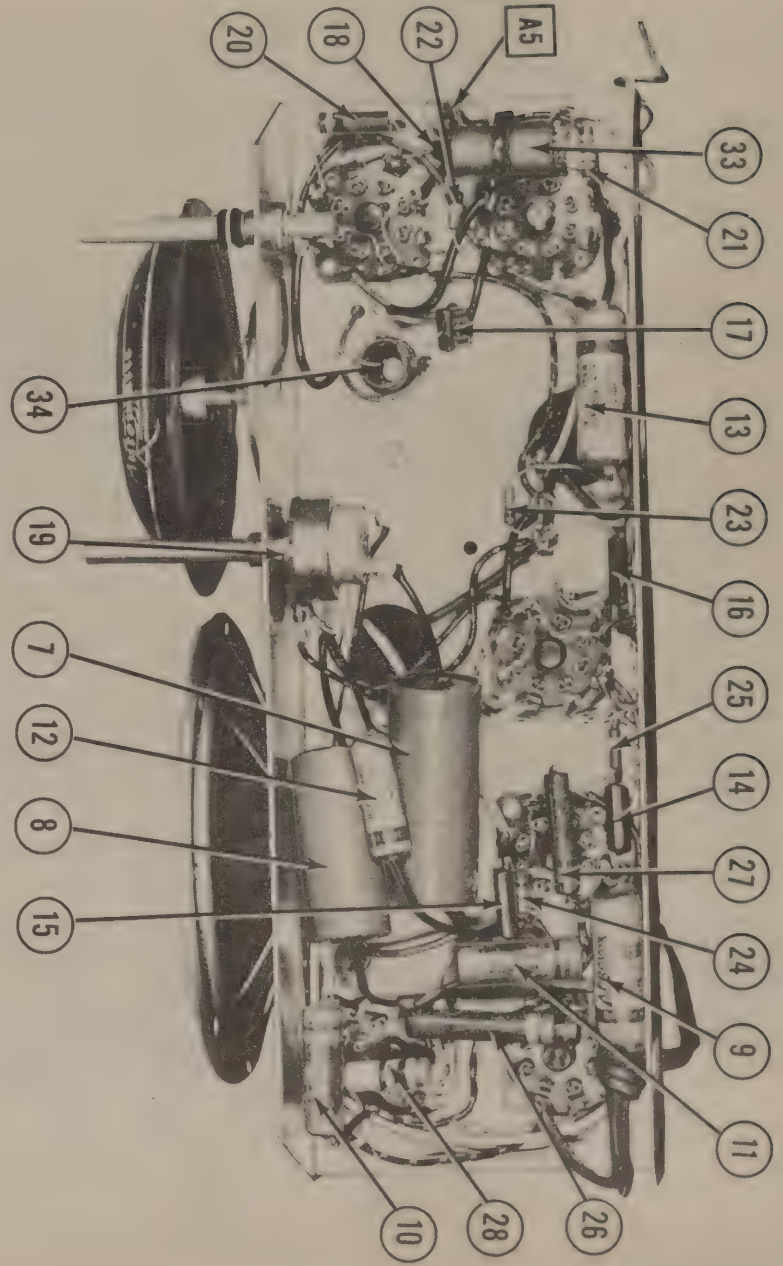
MISCELLANEOUS

ITEM No.	PART NAME	AUTOMATIC PART No.	NOTES
38	Tuning Cap.		2 Gang Variable Cap.

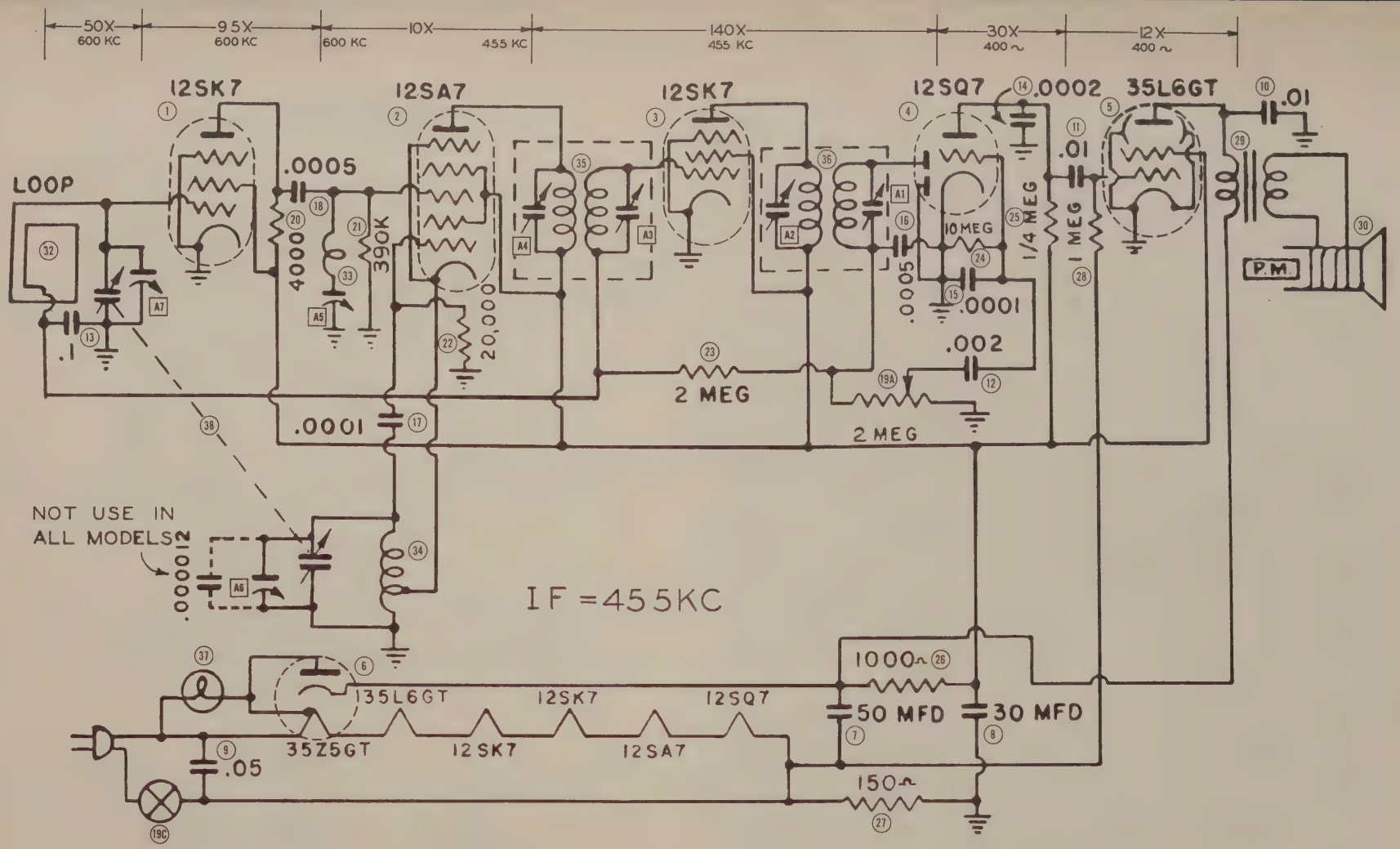


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



AUTOMATIC
MODELS 614X, 616X



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT	0V.	37V.AC	0V.	-.25VDC	0V.	83VDC	26VAC	50VDC
2	12SA7GT	0V.	26VAC	83VDC	83VDC	-5.4VDC	0V.	14VAC	0V.
3	12SK7GT	0V.	47VAC	0V	-.25VDC	0V	83VDC	37VAC	83VDC
4	12SQ7GT	0V.	-5VDC	0V.	-55VDC	0V	59VDC	14VAC	0V.
5	35L6GT	-8.2VDC	85VAC	117VDC	83V. DC	-2VDC	0V.	47VAC	0V.
6	35Z5GT	0V.	117VAC	113VAC	-8.2VDC	113VAC	0V.	85VAC	118VDC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT	0Ω	178Ω	0Ω	3.7MEG	0V.	60KΩ	168Ω	64KΩ
2	12SA7GT	0Ω	168Ω	60KΩ	60KΩ	14.5KΩ	.6Ω	157Ω	360KΩ
3	12SK7GT	0Ω	190Ω	0Ω	3.7MEG	0Ω	60KΩ	178Ω	60KΩ
4	12SQ7GT	0Ω	10MEG	0Ω	1.6MEG	0Ω	300KΩ	157Ω	147Ω
5	35L6GT	147Ω	220Ω	60KΩ	60KΩ	975KΩ	INF	190Ω	0Ω
6	35Z5GT	INF	245Ω	242Ω	147Ω	242Ω	INF	220Ω	60KΩ

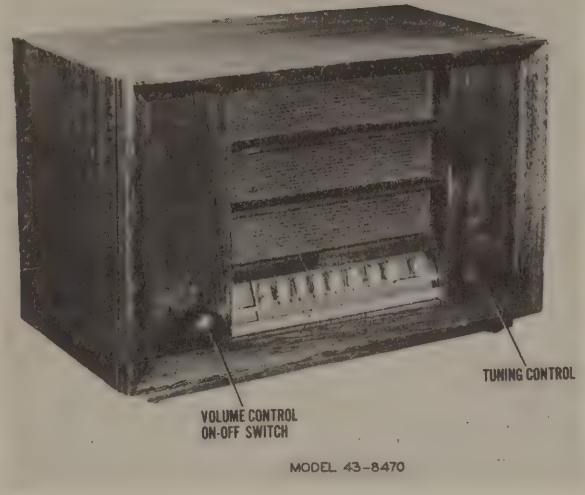
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

468-2

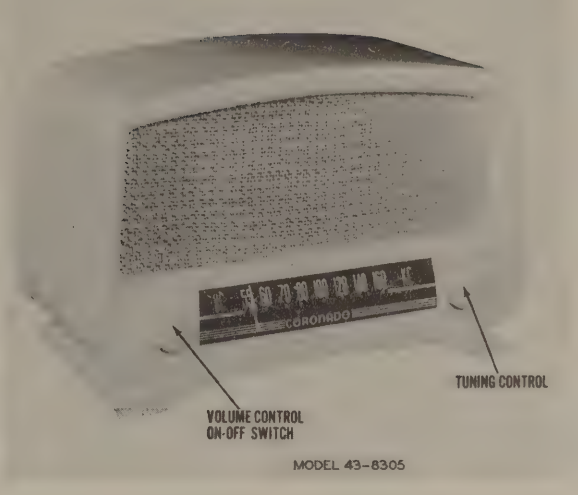
The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

CORONADO
MODELS 43-8305, 43-8470



MODEL 43-8470



MODEL 43-8305

CORONADO
MODELS 43-8305, 43-8470

CORONADO MODEL 43-8470

TRADE NAME	Coronado Models 43-8305, 43-8470
MANUFACTURER	"Coronado" Minneapolis, Minn. - Los Angeles, Calif.
TYPE SET	AC-DC Superheterodyne Self Contained Loop Antenna
TUBES (SIX)	Types, 12SK7 RF Amp., 12SA7 Mixer, 12SF7 IF-Det.-AVC, 12SJ7 1st AF, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	535-1620KC RATING .230 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

Set dial pointer and diffuser strip as shown on dial calibration diagram. Volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin #2 (grid) 12SF7. Low side to B-.	455KC	Tuning control maximum clockwise.	Across voice coil	A1,A2.	Adjust for maximum output. Use isolation transformer if available. If not, connect capacitor in series with low lead to B- and decrease dummy ant. to .001 MFD. to prevent excessive hum modulation.
.1 MFD.	High side to pin #8 (grid) 12SA7. Low side to B-.	"	"	"	A3,A4.	"
.1 MFD.	"	1400KC	1400KC index line	"	A5	"
50 MMFD.	High side to ext. ant. clip. Low side to chassis.	"	"	"	A6	Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12SK7	12SK7	8N	
2	Mixer	12SA7	12SA7	8R	
3	IF-Det.-AVC	12SF7	12SF7	7AZ	
4	1st AF	12SJ7	12SJ7	8N	
5	Power Output	35L6GT	35L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CORONADO PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	50	150	45X344	2N521	DSB-2x50-150/20-25	EL-352	PRSA150-40-40	EZ5515	Filter - Red
B	50	150							" - Green
C	20	25		TC26			PRS25-25	BR202A	Cath. Bypass - Yellow
8	.1	400		TP428	S-4-1	TC-1	484-.1	DT4P1	Line Filter
9	.2	200		TP429	S-4-2	TC-2	484-.2	DT4P2	Line Isolating
10	.01	200		TP421	S-4-01	TC-11	484-01	DT4S1	35L6 Plate Bypass
11	.025	200		TP451	S-4-02	TC-12	484-025	DT4S25	Audio Plate Decoup.
12	.01	200		TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
13	.1	200		TP428	S-4-1	TC-1	484-.1	DT4P1	Audio Screen Bypass
14	.006	200		TP409	S-6-006	TC-26	484-006	DT6D6	Audio Coupling
15	.04	200		TP425	S-6-04	TC-14	484-04	DT4S4	Tone Compensation
16	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
17	.001	400		TP404	S-6-001	TC-21	684-001	DT6D1	Ant. Coupling
18	470	500		MC245	M0.5-35	1FM-35	1468-0005	5W5T5	Audio Plate Bypass
19	100	500		MC235	M0.5-31	1FM-31	1468-0001	5W5T1	IF Bypass Diode †
20	47	500		MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Tone Compensation
21	47	500		MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor
22	100	500		MC235	M0.5-31	1FM-31	1468-0001	5W5T1	RF Coupling

†Not used in all models.

CONTROLS

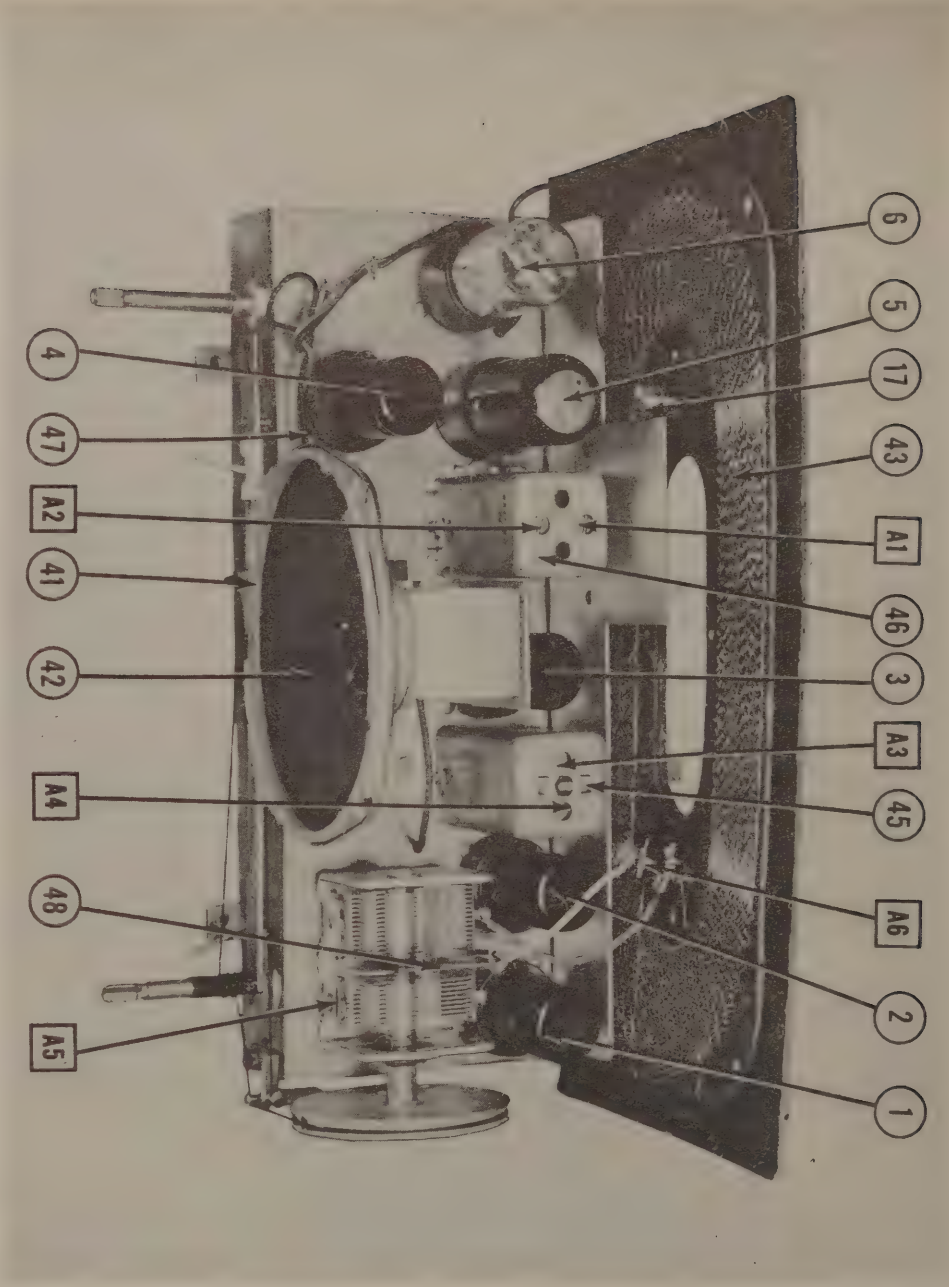
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
23A	500KΩ	1	36X347A	TM230	D13-133X	AT-92‡	Volume control
B	Shaft		Not Req.	SS-25	E	KSS-3	Attach to 23A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

‡Use 100KΩ tap. Cut other tap off.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	IRC PART No.	IDENTIFICATION CODES
24	330Ω	½		BTS-330	Or.-Or.-Red RF Plate Load
25	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Convertor Grid
26	39KΩ	½		BTS-39K	Or.-White-Or. Oscillator Grid
27	2.2 Meg.	½		BTS-2.2 Meg	Red-Red-Grn. AVC Network
28	47KΩ	½		BTS-47K	Yl.-Vi.-Or. IF Filter
29	15KΩ	½		BTS-15K	Br.-Grn.-Or. Tone Compensation
30	4.7 Meg.	½		BTS-4.7 Meg	Yl.-Vi.-Grn. 1st AF Grid
31	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. 1st AF Screen Dropping
32	33KΩ	½		BTS-33K	Or.-Or.-Or. 1st AF Plate Load
33	82KΩ	½		BTS-82K	Gray-Red-Or. 1st AF Plate Filter
34	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
35	180Ω	½		BW-½-180	Br.-Gray-Br. Output Cathode
36	1500Ω	1		BTA-1500	Br.-Grn.-Red Filter
37	27Ω	½		BW-½-27	Red-Vi.-Blk. Rectifier Ballast
38	270KΩ	½		BTS-270K	Red-Vi.-Yl. Line Isolating
39	39Ω	2		BW-2-39	Or.-White-Blk. Line Dropping

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CORONADO PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
40	2500Ω	3.3Ω	200Ω	.65Ω	51X119	A-3876	T-22S45		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			CORONADO PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-107*		
41	PM	3.3Ω	12A439	Mod. P5-V		*Fabricate new mounting bracket.
	CONE DIA.	VC DIA.				
42	4⅛"	½"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

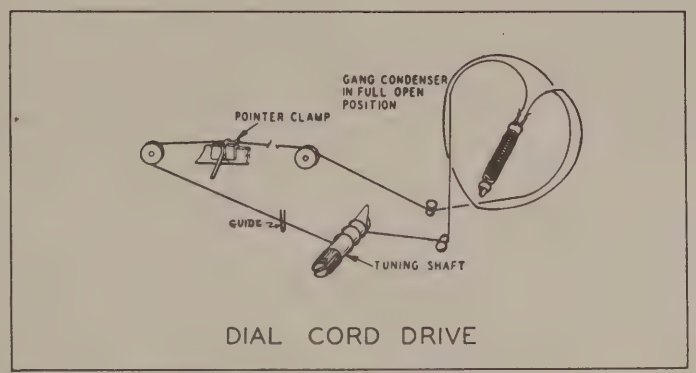
ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	CORONADO PART No.	MEISSNER PART No.	
43	Loop Ant.	.1Ω	1Ω	9A1829		
44	Osc. Coil	.5Ω	6Ω		14-1040	
45	Input IF	22Ω	22Ω	9A1775A	16-6658	
46	Output IF	21.8Ω	18.3Ω	9A1776B	16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					CORONADO PART No.		
47	Bayonet	6-8	0 15	Brown			Type 47

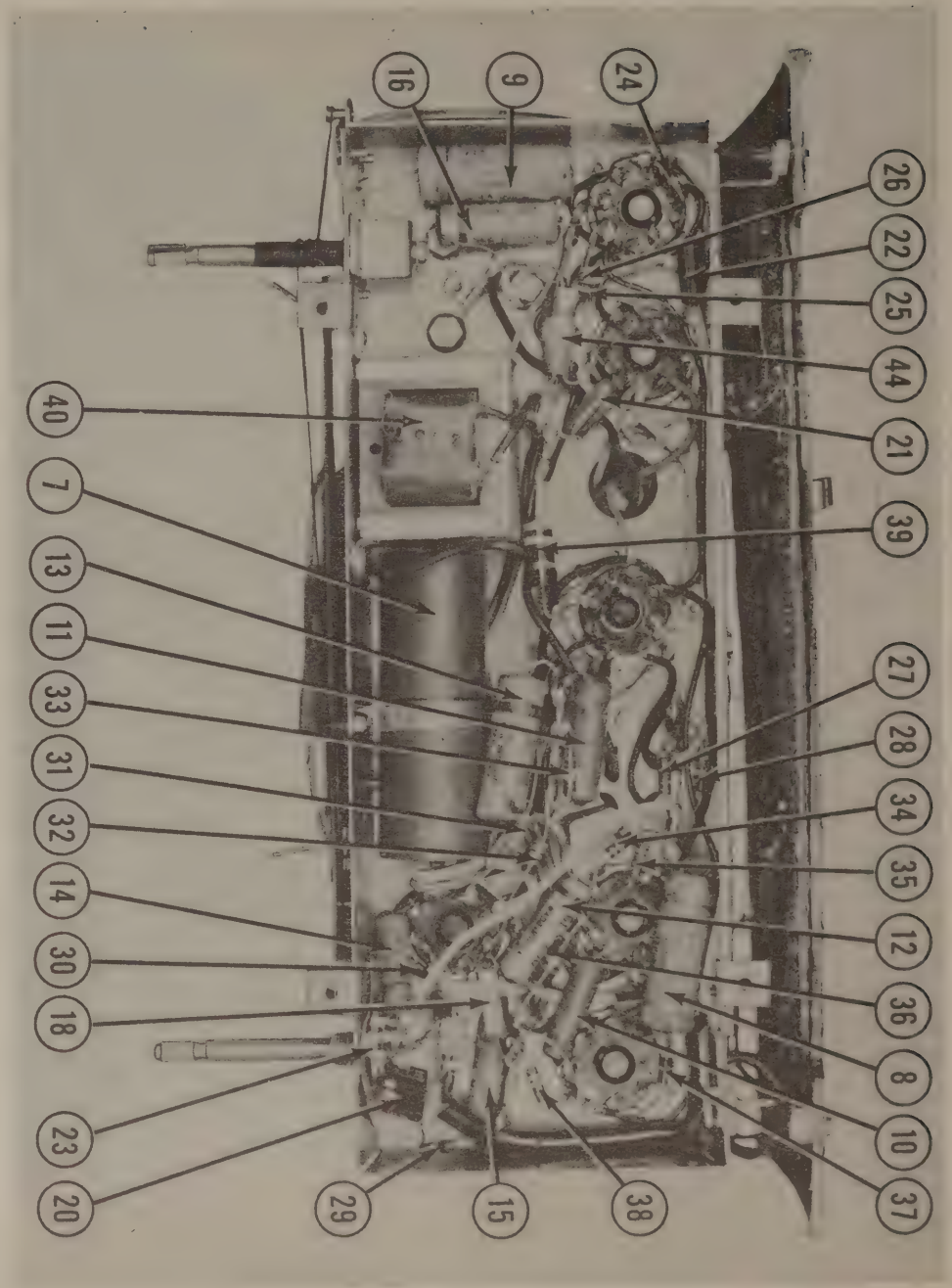
MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
48	Tuning Cap.	14A179	2 Gang Variable Cap.

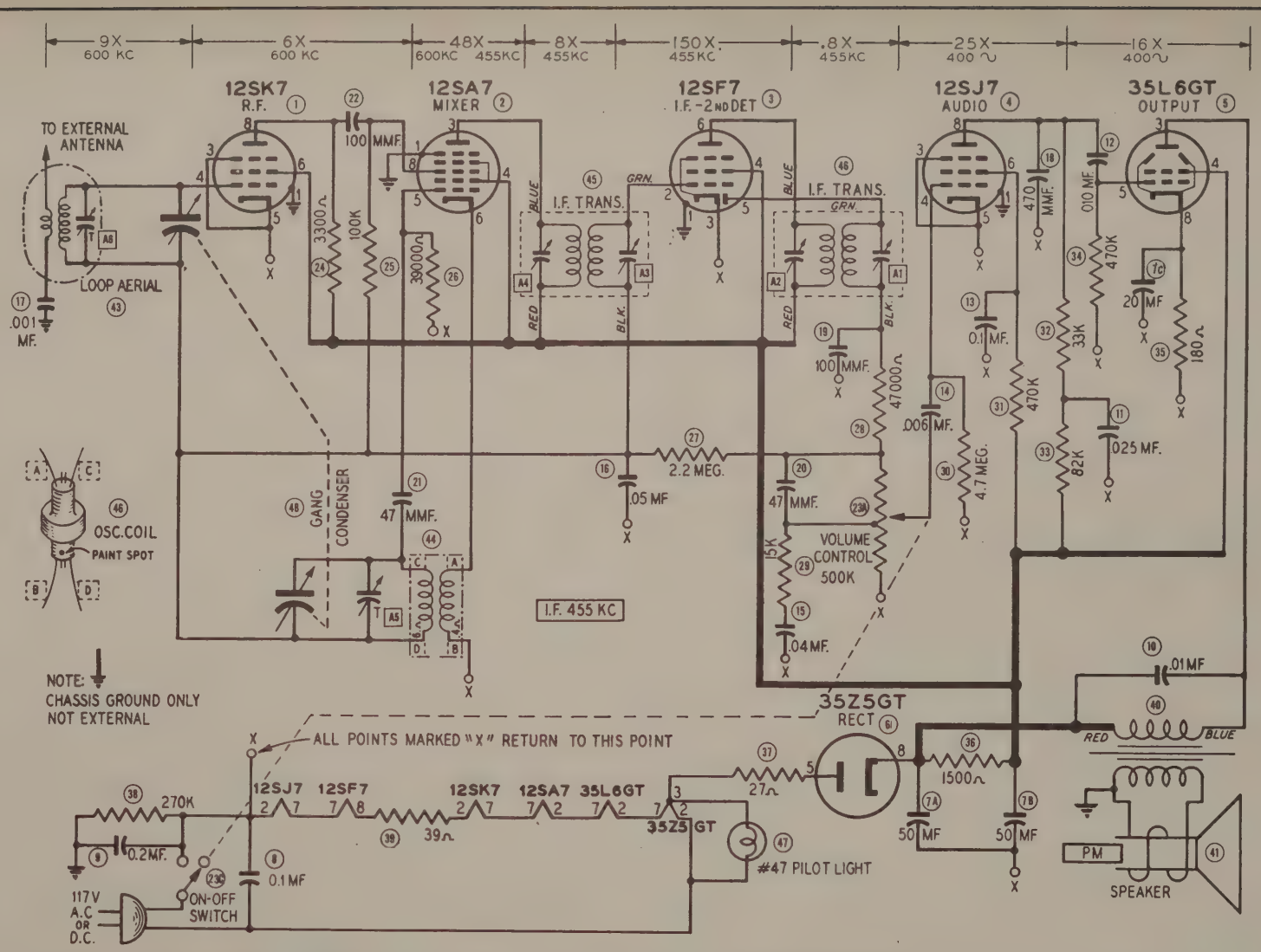


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



CORONADO
MODELS 43-8305, 43-8470



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7	-.05V.DC	29.7V.AC	0V.	-.4V.DC	0V.	73V.DC	42V.AC	47V.DC
2	12SA7	-.05V.DC	53V.AC	73V.DC	73V.DC	-.4V.DC	0V.	42V.AC	-.4V.DC
3	12SF7	-.05V.DC	-.4V.DC	0V.	73V.DC	-.3V.DC	73V.DC	11.6VAC	23.5VAC
4	12SJ7	-.05V.DC	0V.	0V.	-.45V.DC	0V.	19.7V.DC	11.6VAC	29V.DC
5	35L6GT	0V.	85V.AC	107V.DC	73V.DC	0V.	0V.	53V.AC	4.8V.DC
6	35Z5GT	0V.	117V.AC	112V.AC	0V.	111V.AC	0V	85VAC	117V.DC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7	320KΩ	65Ω	0Ω	2.7MEG	0Ω	30.5KΩ	78Ω	33.5KΩ
2	12SA7	320KΩ	89Ω	30.5KΩ	30.5KΩ	37KΩ	.5Ω	78Ω	2.8MEG
3	12SF7	320KΩ	2.7MEG	0Ω	30.5KΩ	480KΩ	30.5KΩ	12Ω	24Ω
4	12SJ7	320KΩ	0Ω	0Ω	4.5MEG	0Ω	500KΩ	12Ω	145KΩ
5	35L6GT	INF	123Ω	29KΩ	30.5KΩ	510KΩ	INF	89Ω	175Ω
6	35Z5GT	INF	152Ω	149Ω	INF	177Ω	INF	123Ω	29KΩ

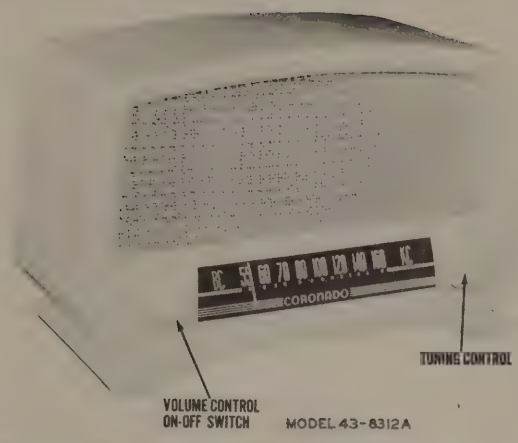
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

468-3

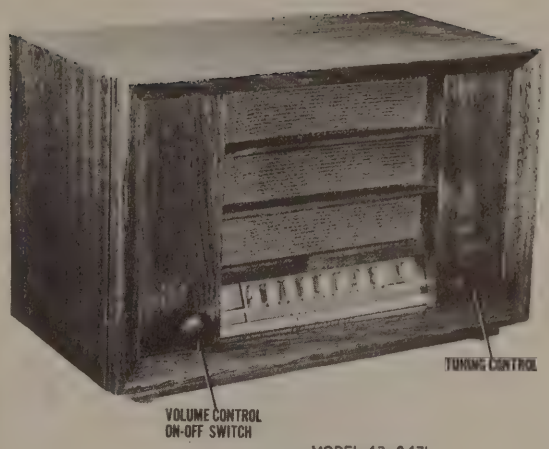
The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

CORONADO
MODELS 43-8312A, 43-8471



MODEL 43-8312A



MODEL 43-8471

CORONADO
MODELS 43-8312A, 43-8471

CORONADO MODEL 43-8312A

TRADE NAME	Coronado Models 43-8312A, 43-8471 1809A, B.
SUPPLIER	"Coronado" Minneapolis, Minn - Los Angeles, Calif.Ill.
TYPE SET	AC-DC Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types 12SK7 RF Amp., 12SA7 Converter, 12SF7 IF-Det.-AVC, 12SJ7 1st AF Amp., 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC RATING .230 Amps. @ 117V AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS

Check dial pointer position as shown on dial diagram. Volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD	High side to pin #2 (grid) 12SF7. Low side to B-.	455KC	1600Kc	Across voice coil.	A1,A2.	Adjust for maximum output. Use isolation transformer if available. If not, connect capacitor in series with low side to B-. and decrease dummy ant. to .001 MFD to prevent excessive hum modulation.
"	High side to pin #8 (grid) 12SA7. Low side to B-.	"	"	"	A3,A4.	"
"	"	1400KC	1400KC index line.	"	A5	"
50 MMFD	High side to ext. ant. clip on loop frame. Low side to chassis.	"	"	"	A6,A7	Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12SK7	12SK7	8N	
2	Converter	12SA7	12SA7	8R	
3	IF-Det.-AVC	12SF7	12SF7	7AZ	
4	1st AF Amp.	12SJ7	12SJ7	8N	
5	Power Output	35L6GT	35L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CORONADO PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	50	150	45X344	2N521	OSB-2x50-150/20-25	EL-352	PRS150-40-40	EZ5515	Filter - Red
B	50	150							" - Green
C	20	25		TC26	M-25-25	TA-25	PRS25-25	BR202A	" - Yellow
8	.1	400		TP428	S-4-1	TC-1	484-.1	DT4P1	Line Filter
9	.2	200		TP429	S-4-2	TC-2	484-.2	DT4P2	Line Isolating
10	.01	200		TP421	S-4-01	TC-11	484-.01	DT4S1	35L6 Plate Bypass
11	.025	200		TP451	S-4-02	TC-12	484-.025	DT4S25	Audio Plate Decoup.
12	.01	200		TP421	S-4-01	TC-11	484-.01	DT4S1	Audio Coupling
13	.1	200		TP428	S-4-1	TC-1	484-.1	DT4P1	Audio Screen Bypass
14	.006	200		TP409	S-6-006	TC-26	484-.006	DT6D6	Audio Coupling
15	.04	200		TP425	S-4-04	TC-14	484-.04	DT4S4	Tone Compensation
16	.05	200		TP426	S-4-05	TC-15	484-.05	DT4S5	AVC Filter
17	.001	200		TP404	S-6-001	TC-21	484-.001	DT6D1	RF Bypass
18	.001	200		TP404	S-6-001	TC-21	484-.001	DT6D1	RF Coupling
19	.001	200		TP404	S-6-001	TC-21	484-.001	DT6D1	AVC Filter
20	.001	400		TP404	S-6-001	TC-21	484-.001	DT6D1	Ant. Coupling
21	.05	200		TP426	S-4-05	TC-15	484-.05	DT4S5	12SA7 Screen Bypass*
22	470	500		MC245	M0.5-35	1FM-35	1468-.0005	5W5T5	Audio Plate Bypass
23	100	500		MC235	M0.5-31	1FM-31	1468-.0001	5W5T1	IF Bypass Diode
24	47	500		MC225	M0.5-45	1FM-31	1468-.00005	5W5Q5	Tone Compensation
25	47	500		MC225	M0.5-45	1FM-45	1468-.00005	5W5Q5	Osc. Grid Capacitor

*Used in some models

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
26A	500KΩ	1	36X347	TM230	D13-133X	AT-92‡	Volume Control
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 26A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

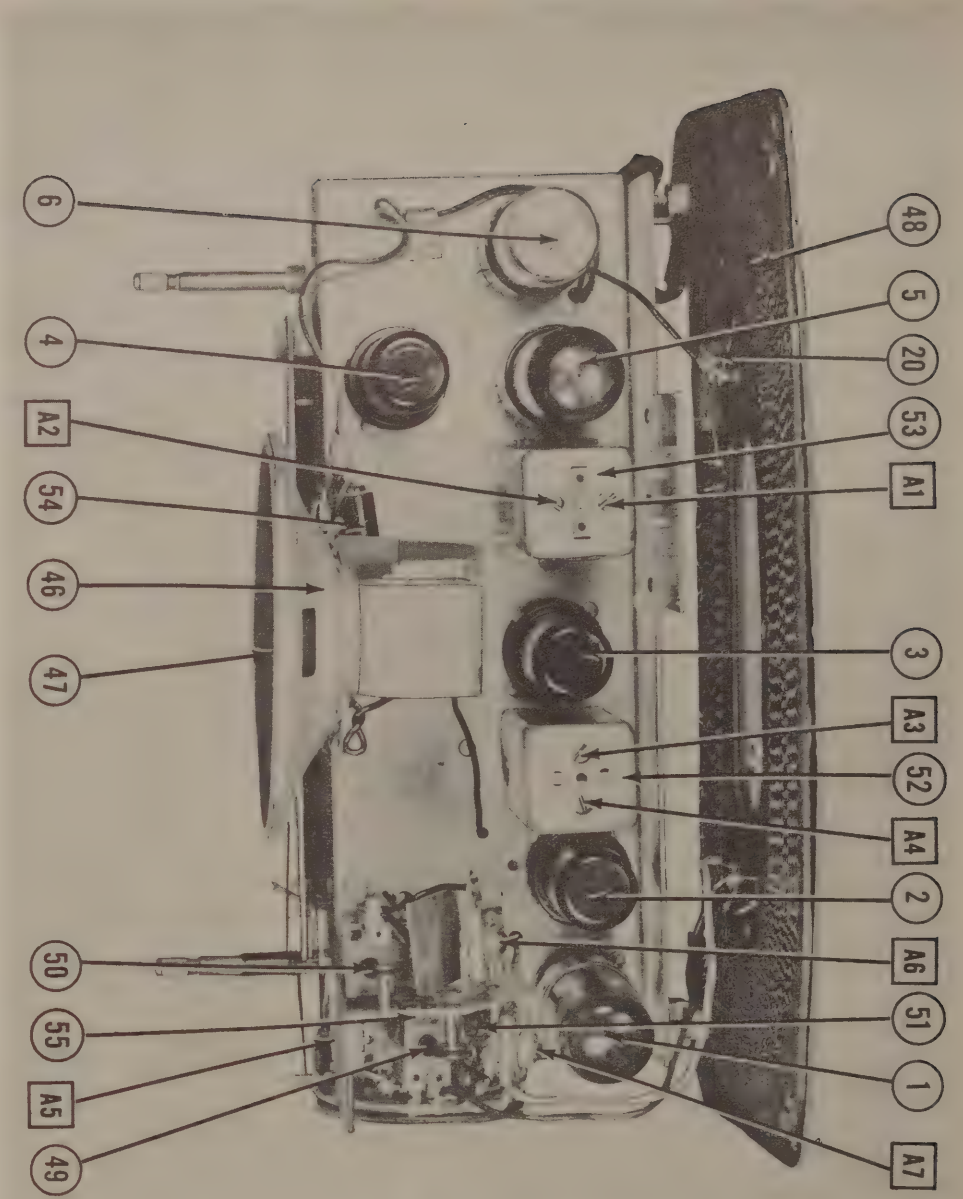
‡ Use 100KΩ tap. Cut other tap off.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	IRC PART No.	IDENTIFICATION CODES
27	220KΩ	½		BTS-220K	Red-Red-Yl. AVC Network
28	15KΩ	½		BTS-15K	Br.-Grn.-Or. RF Screen Dropping
29	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Converter Grid
30	39KΩ	½		BTS-39K	Or.-White-Or. Osc. Grid
31	2.2 Meg.	½		BTS-2.2 Meg	Red-Red-Grn. AVC Network
32	47KΩ	½		BTS-47K	Yl.-Vi.-Or. IF Filter
33	15KΩ	½		BTS-15K	Br.-Grn.-Or. Tone Compensation
34	4.7 Meg.	½		BTS-4.7 Meg	Yl.-Vi.-Grn. 1st AF Grid
35	33KΩ	½		BTS-33K	Or.-Or.-Or. 1st AF Plate Load
36	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. 1st AF Screen Dropping
37	82KΩ	½		BTS-82K	Gray-Red-Or. 1st AF Plate Filter
38	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
39	180Ω	½		BW-½-180	Br.-Gray-Br. Output Cathode
40	1500Ω	1		BTA-1500	Br.-Grn.-Red Filter
41	27Ω	½		BW-½-27	Red-Vi.-Blk. Rectifier Ballast
42	39Ω	2		BW-2-39	Or.-White-Blk. Filament Dropping
43	270KΩ	½		BTS-270K	Red-Vi.-Yl. Line Isolating
44	470Ω	½		BTS-470	Yl.-Vi.-Br. Filter *

*Not used in all models.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA CORONADO PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDAR'N PART No.		INSTALLATION NOTES
45	300Ω	4Ω	350Ω	.85Ω	51X116	A-3876†	T-22S45††		†Drill new mounting holes. ††Mount vertically instead of horizontally beneath chassis.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA CORONADO PART No.	REPLACEMENT DATA JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-107#		#Fabricate new mounting bracket.
46	PM	3.1Ω	12A481	Mod. P5-V		
	CONE DIA.	VC DIA.				
47	4½"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA CORONADO PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
48	Loop Ant.	0Ω	.5Ω			
49	Ant. Coil	.5Ω	8Ω			Items 49, 50, 51 ganged & slug tuned
50	RF Coil	8.3Ω				
51	Osc. Coil	.7Ω	6Ω			
52	Input IF	22Ω	22Ω	9A1775	16-6658	
53	Output IF	21.8Ω	18.3Ω	9A1776C	16-6660	

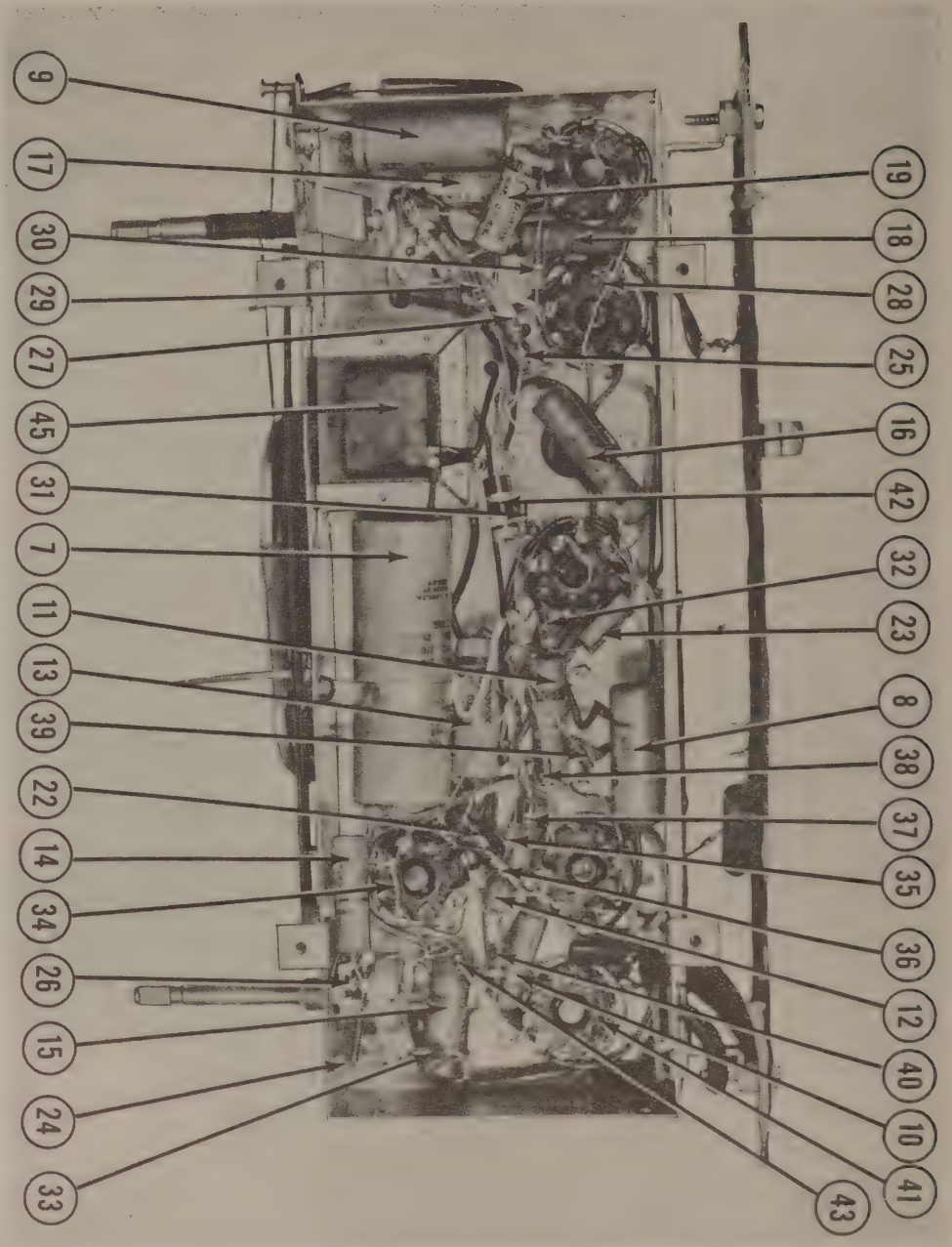
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA CORONADO PART No.		INSTALLATION NOTES
54	Bayonet	6-8	0.15	Brown			Type 47

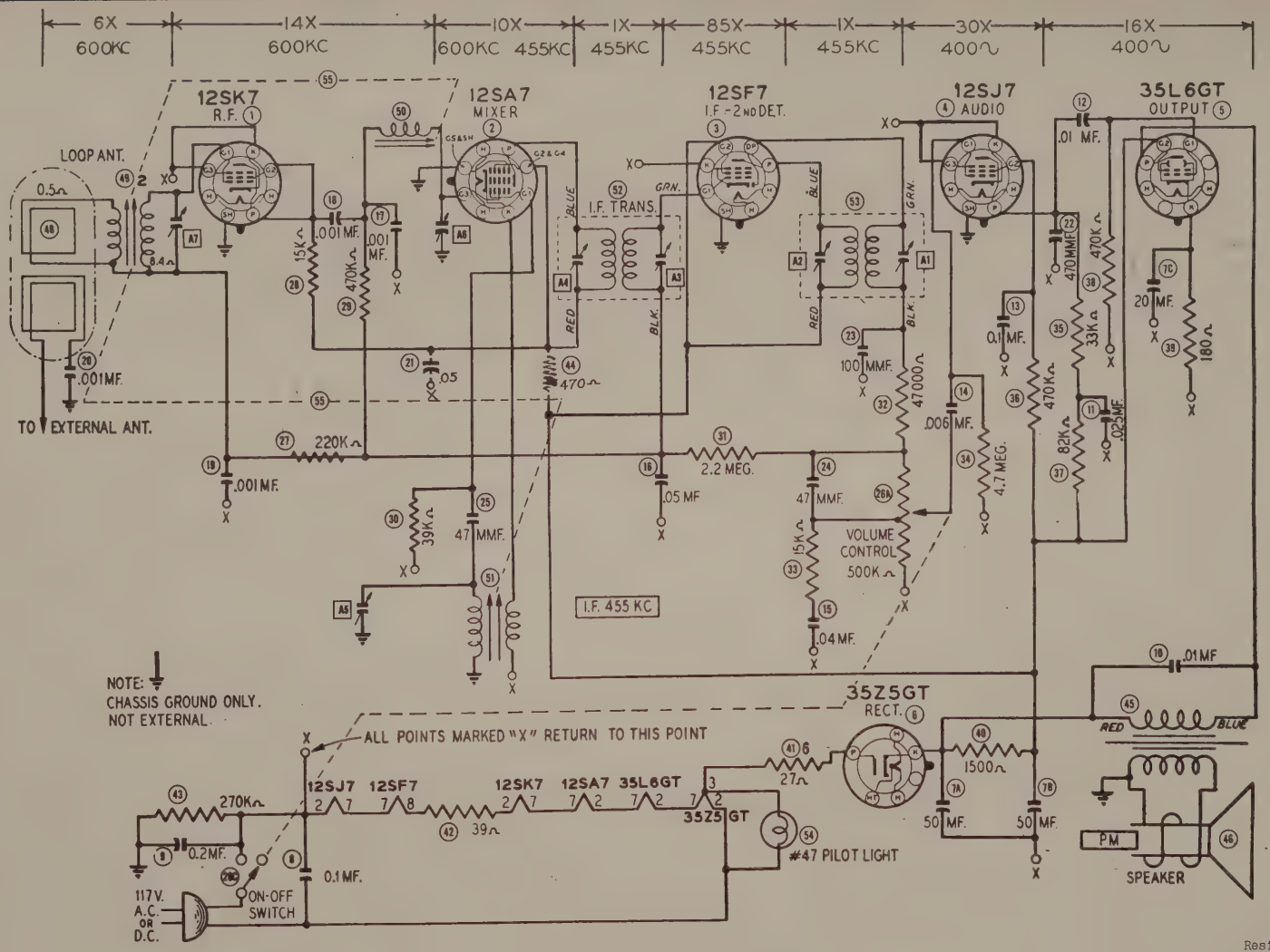
MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
55	Tuning Assby.	20A97	Complete with Coils & Trimmers
A5	Trimmer	17A239	Osc. Adj. 40-370 MMF
A6	"	17A243	RF Adj. 4-70 MMF
A7	"	17A238	Ant. Adj. 4-70 MMF

CHASSIS—BOTTOM VIEW



CORONADO MODELS 43-8312A, 43-8471

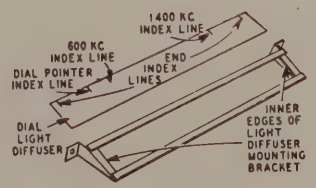


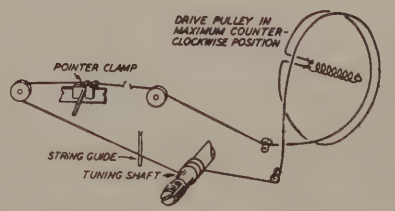
Pin No	12SK7 Volt	12SK7 Res	12SA7 Volt	12SA7 Res
1	0 V.	290K Ω	0 V.	290K Ω
2	31.8 VAC	62 Ω	57 V AC	82 Ω
3	0 V.	0 Ω	82 V DC	50K Ω
4	-.6 V DC	2.5 MEG	82 V DC	50K Ω
5	0 V.	0 Ω	-4 V DC	39K Ω
6	34 V DC	65K Ω	0 V.	.5 Ω
7	43.6 VAC	72 Ω	43.6 VAC	72 Ω
8	34 V DC	65K Ω	-.05 V DC	2.8 MEG

Pin No	12SF7 Volt	12SF7 Res	12SJ7 Volt	12SJ7 Res
1	0 V.	290K Ω	0 V.	290K Ω
2	-35 V. DC	2.3 MEG	0 V.	0 Ω
3	0 V.	0 Ω	0 V.	0 Ω
4	82 V. DC	50K Ω	-45 V DC	3.9 MEG
5	-35 V. DC	430K Ω	0 V.	0 Ω
6	82 V DC	50K Ω	20 V. DC	520K Ω
7	12.8 VAC	12 Ω	12.8 VAC	12 Ω
8	25.8 VAC	24.5 Ω	23.5 V DC	165K Ω

Pin No	35L6GT Volt	35L6GT Res	35Z5GT Volt	35Z5GT Res
1	0 V.	1 NF	0 V.	1 NF
2	88 V. AC	108 Ω	117 VAC	135 Ω
3	10.9 V DC	50K Ω	113 VAC	132 Ω
4	82 V DC	50K Ω	0 V.	1 NF
5	0 V.	470K Ω	112 VAC	160 Ω
6	0 V	1 NF	0 V.	1 NF
7	57 V AC	82 Ω	88 V. AC	108 Ω
8	5.4 V DC	179 Ω	118 V DC	50K Ω

Resistance readings in the B+ circuits may vary widely according to the condition of the filter capacitors.


1400 KC INDEX LINE
600 KC INDEX LINE
DIAL POINTER INDEX LINE
END INDEX LINES
DIAL LIGHT DIFFUSER
INNER EDGES OF LIGHT DIFFUSER MOUNTING BRACKET



468-4

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

CROSLEY
MODEL 56TP

CROSLEY
MODEL 56TP

CROSLEY MODEL 56TP

TRADE NAME	Crosley Model 56TP
MANUFACTURER	Crosley Corp., 1329 Arlington St., Cincinnati, Ohio
TYPE SET	AC Operated Combination Phono. - 2 Band Superheterodyne Receiver, Self Contained Loop Antenna
TUBES(FIVE)	Types, 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	105-125 Volts AC — RATING .255 Amps. @ 117V AC
TUNING RANGE—BROADCAST	540-1600KC — **SHORT WAVE** 5.8 - 15 MC

ALIGNMENT INSTRUCTIONS

Turn tuning condenser to completely closed position and set dial pointer on reference line. Use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting. Be sure correct peak is obtained when adjusting A5. Correct peak is second one heard as the trimmer adjustment screw is opened from a completely closed position. (Image should be heard 910KC lower than the fundamental on the receiver dial)

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
200 MMF.	High side to ant lead. Low side to B-.	455KC	BC	High freq.end	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output
400Ω carbon resistor	"	15.3MC	SW	"	"	A5	" " " "
"	"	15.0MC	"	Tune for maximum output.	"	A6	" " " "
200 MMF.	"	1620KC	BC	High freq. end.	"	A7	" " " "
"	"	1400KC	"	Tune for maximum output.	"	A8	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12SA7GT	12SA7GT	8AD	
2	IF Amp.	12SK7GT	12SK7GT	8N	
3	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CROSLEY PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	60	150	W-134988	2N520	M-5030-150	EL-26		BRD5315	Filter - Red
B	20	100							" "
7	.05	200	39001-65	TP426	S-4-05	TC-15	484-05	DT4S2	Line Filter
8	.0033	600	39001-10	TP406	S-6-003	TC-23	684-003	DT6D3	Tone Compensation
9	.05	200	39001-65	TP426	S-4-05	TC-15	484-05	DT4S5	50L6 Plate Bypass
10	.022	200	39001-63	TP423	S-4-05	TC-12	484-02	DT4S2	Audio Coupling
11	.0033	600	39001-10	TP406	S-6-003	TC-23	684-003	DT6D3	" "
12	.1	200	39001-67	TP428	S-4-1	TC-1	484-.1	DT4P1	Line Isolation
13	.022	200	39001-63	TP423	S-4-02	TC-12	484-02	DT4S2	AVC Filter
14	.022	200	39001-63	TP423	S-4-02	TC-12	484-02	DT4S2	Conv. Screen Bypass
15	.075	200	39001-66	TP452	S-4-1	TC-1	484-075	DT4P1	Ant. Coupling
16	250	500	39001-73	MC240	M0.5-325	1FM-325	1468-00025	5W5T25	Audio Plate Bypass
17	50	500	B226638-53	MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor
18	580	300	GC21068S143						Fixed Padder SW

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
19A	1 Meg.	1	C-46846-6	MR53	D13-137	M-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 19A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	IRC PART No.	IDENTIFICATION CODES
20	330KΩ	½	39281-28	BTS-330K	Or.-Or.-Yl. Convertor Grid
21	15 Meg.	½	39281-38	BTS-15 Meg.	Br.-Grn.-Blue AVC Network
22	22KΩ	½	39281-21	BTS-22K	Red-Red-Or. Oscillator Grid
23	250KΩ	½		BTS-270K	Red-Grn.-Yl. Line Isolation
24	3.3 Meg.	½	39281-34	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
25	5 Meg.	½		BTS-4.7 Meg.	Grn.-Blk.-Grn. 1st AF Grid
26	470KΩ	½	39281-29	BTS-470K	Yl.-Vi.-Yl. 1st AF Plate Load
27	510KΩ	½		BTS-470K	Grn.-Br.-Yl. Output Grid
28	100Ω	½	39281-7	BW-½-100	Br.-Blk.-Br. Output Grid
29	1200Ω	1	39015-26	BTA-1000	Br.-Red-Red Filter
30	47Ω	1	W-137367	BT-1-47	Yl.-Vi.-Blk. Surge Limiter-See Note 1
31	150Ω	½	39281-8	BW-½-150	Br.-Grn.-Br. Line Dropping
32	470Ω	½	39281-11	BTS-470	Yl.-Vi.-Br. Decoupling

Note 1 - Not used in all models.

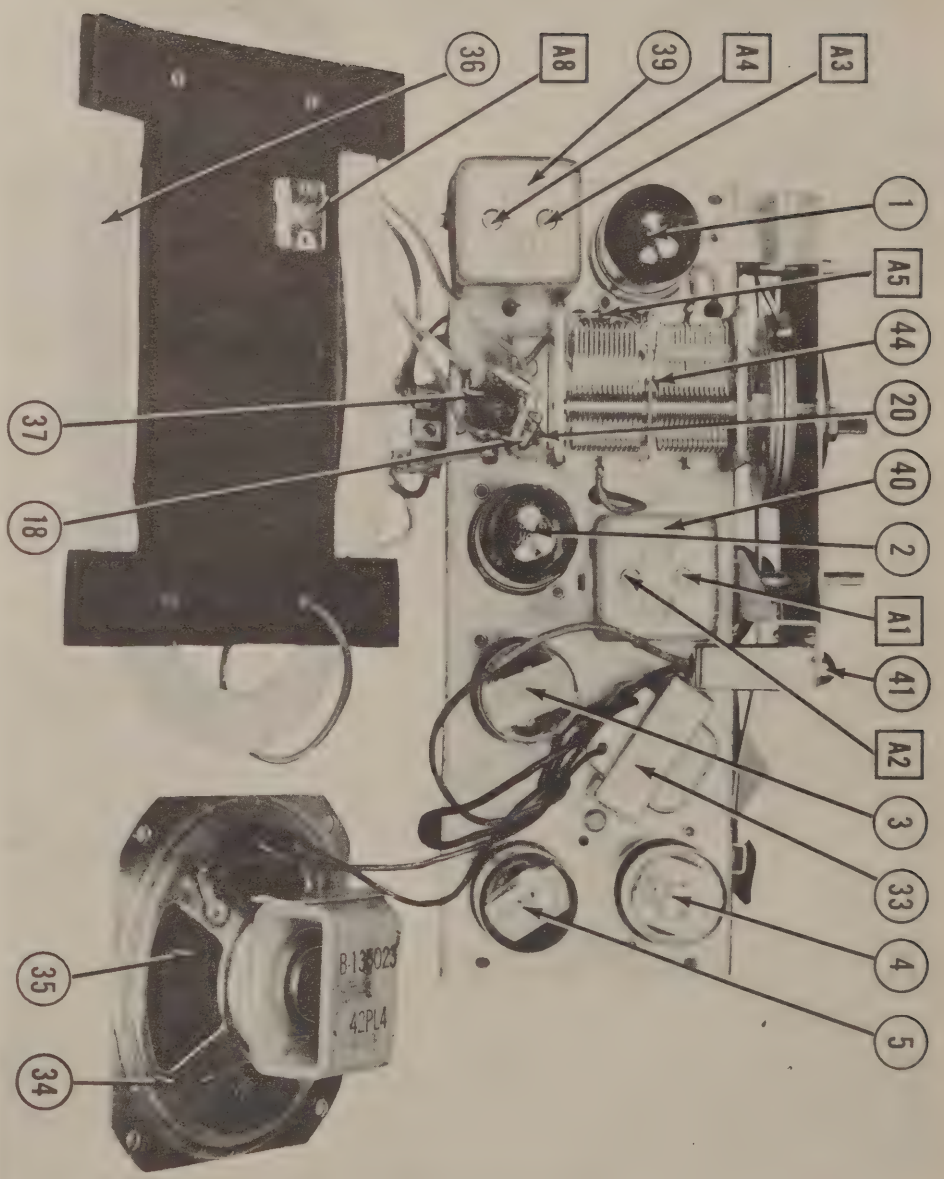
TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: CROSLEY PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
33	2010Ω	3.2Ω	200Ω	.6Ω	B-134940	A-3876	T-22S45		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: CROSLEY PART No.	JENSEN PART No.		INSTALLATION NOTES
34	FIELD PM	VC IMP. 3.2Ω	R-135023	ST-113 Mod. P4-X		
35	CONE DIA. 4"	VC DIA. 1/2"	NOT READILY	REPLACEABLE-USE COMPLETE SPEAKER UNIT		

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA CROSLEY PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
36	Loop Ant.	.8Ω	2Ω	AC134605		
37	Sw Ant. Coil	.7Ω	.3Ω	AW134994		
38A	BC Osc. Coil	1Ω	5.8Ω	AW134993		Items 38A, 38B wound on same form
B	SW Osc. Coil	.2Ω	0Ω	AW134993		
39	Input IF	22.3Ω	19.5Ω	AW134065	16-6658	
40	Output IF	27Ω		AW134158	16-6670	

DIAL LIGHT

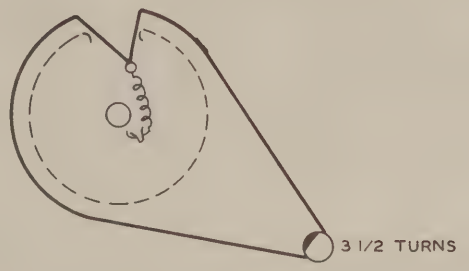
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA CROSLEY PART No.	REPLACEMENT DATA	INSTALLATION NOTES
41	Bayonet	6-8	0.15	Brown	W-48858		Type 47

MISCELLANEOUS

ITEM No.	PART NAME	CROSLEY PART No.	NOTES
42	Switch	W-134939	Tone Control
43	"	B-134720	Band Change
44	Tuning Cap.	B-134995	2 Gang Variable Cap.
A6 } A7	Trimmer Cap.	AB-134982	SW Ant. Adj. BC Osc. Adj.
	Dial Face	C-134869	
	Dial Pointer	B-134952	
	Cabinet	R-135021	
	Knob	W-134882	Volume or Tuning
	"	W-134742	Tone
	"	W-134924	Band Change
	Cartridge	136774-68	Pickup
	Phono-motor	136774-129	Motor only

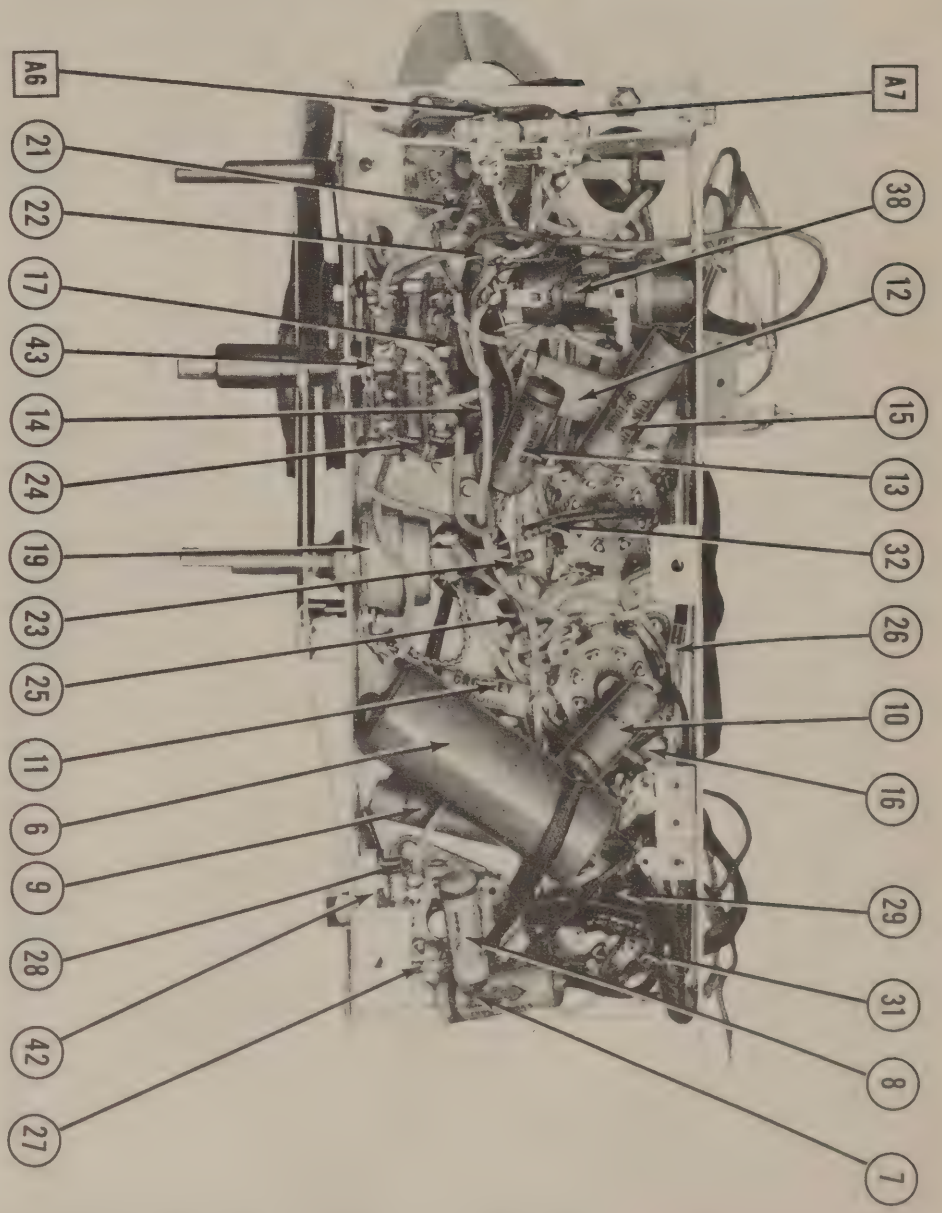
DISASSEMBLY INSTRUCTIONS

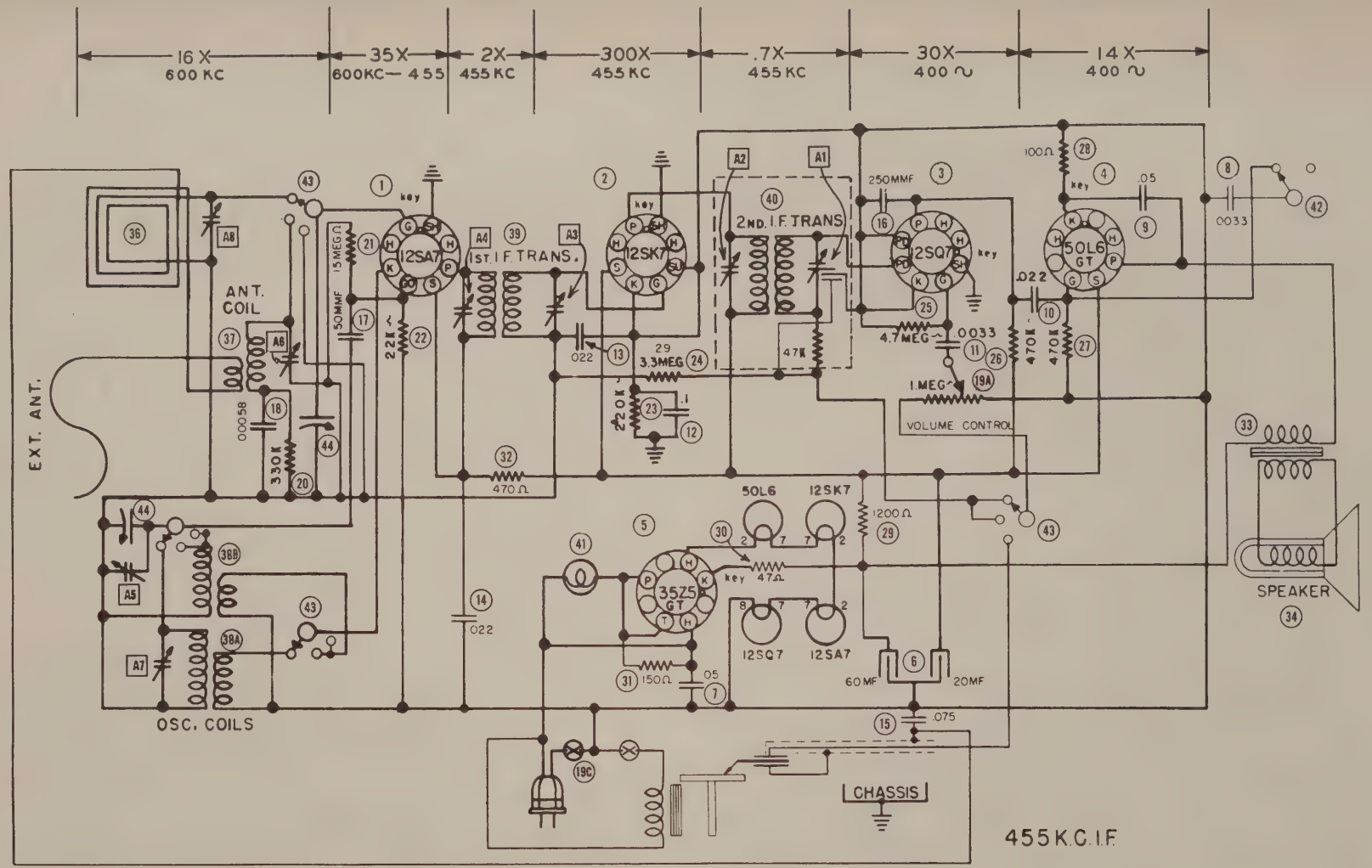
1. Remove the three push-on type control knobs and washers.
2. Unsolder the black and brown pick-up leads from terminal strip on chassis.
3. Remove three hex head screws and washers from chassis board.
4. Remove two nuts, washers and lock washers from the speaker bolts.
5. Remove the two Phillips head screws holding loop antenna to cabinet.
6. Remove two Phillips head screws holding phono-on-off switch to cabinet.
7. Remove phono-on-off switch cover and unsolder black and blue leads from terminals.
8. Remove chassis, speaker, and loop antenna from cabinet.
9. Unsolder black and short blue lead connection from phono-motor.
10. Remove seven fastener buttons holding chassis bottom cover plate to chassis. Remove plate.



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW





NOTE: VOLTAGE AND RESISTANCE READING TAKEN ON STANDARD BROADCAST BAND.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0V.	24V.AC	75V.DC	75V.DC	-2V.DC	0V.	12.5V.AC	-75V.DC
2	12SK7GT	0V.	24V.AC	0V.	-75V.DC	0V.	78V.DC	36V.AC	78V.DC
3	12SQ7GT	0V.	-55V.DC	0V.	-4V.DC	0V.	44V.DC	12.5V.AC	0V.
4	50L6GT	0V.	36V.AC	112V.DC	78V.DC	0V.	0V.	88V.AC	4.4V.DC
5	35Z5GT	0V.	117V.AC	113V.AC	78V.DC	113V.AC	0V.	88V.AC	122V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	225KΩ	22Ω	30KΩ	30KΩ	20.5KΩ	.5Ω	11Ω	3.2MEG.
2	12SK7GT	225KΩ	22Ω	0Ω	3.2MEG.	0Ω	30Ω	33Ω	30KΩ
3	12SQ7GT	225KΩ	5MEG.	0Ω	975KΩ	0Ω	500KΩ	11Ω	0Ω
4	50L6GT	INF.	33Ω	30KΩ	30KΩ	620KΩ	0Ω	77Ω	90Ω
5	35Z5GT	INF.	103Ω	100Ω	30KΩ	100Ω	0Ω	77Ω	30KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

468-5

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

DETROLA
MODEL 572-220-226A

DETROLA MODEL 572-220-226A

TRADE NAME	Detrola Model 572-220-226A
MANUFACTURER	International Detrola Corp., 1501 Beard St., Detroit, Mich
TYPE SET	AC Operated 2 Band Superheterodyne - Self contained Antenna
TUBES(SIX)	Types 6SK7GT RF Amp., 6SA7GT Converter, 6SK7GT IF Amp., 6SQ7GT Det.-AVC-AF 6K6GT Power Output, 5Y3GT Rectifier
POWER SUPPLY	105-125 Volts AC RATING .550 Amps. @ 117VAC
TUNING RANGE--BROADCAST	540-1600 KC SHORT WAVE 6.0-18.0 MC

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set the pointer at the last reference mark at the left end of the dial. Volume control at maximum volume and output from signal generator no higher than necessary to obtain output reading. Use insulated alignment screwdriver.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD	High side to pin #8 (grid) of 6SA7 Low side to chassis.	455KC	BC	High Freq. End	Across voice coil	A1, A2 A3, A4	Adj. for max. output
"	High side to pin #4(grid) of 6SK7 RF tube(1). Low side to chassis	18.3 MC	SW	"	"	A5	"
"	"	16.0MC	SW	Tune for max. output	"	A6	"
400Ω	High side to antenna post. Low side to chassis.	16.0MC	SW	"	"	A7	"
.1 MFD	High side to pin #4(grid) of 6SK7 RF tube (1). Low side to chassis.	1620KC	BC	High Freq. End	"	A8	"
"	"	1400KC	BC	Tune for max. output	"	A9	"
"	"	600KC	BC	"	"	A10	Rock variable and adjust for maximum output. Recheck A8 and A9
-	Loop	1400KC	BC	"	"	A11	Connect output of signal generator to two turns of wire approx. one foot in diameter and radiate into receiver loop. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: DETROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp	6SK7GT	6SK7GT	8N	
2	Converter	6SA7GT	6SA7GT	8AD	
3	IF Amp.	6SK7GT	6SK7GT	8N	
4	Det.-AVC-AF	6SQ7GT	6SQ7GT	8Q	
5	Power Output	6K6GT	6K6GT	7S	
6	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: DETROLA PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7(A)	15	400	A-51356	FP339	DY-2X20-450/20-25	EL-205	AF44J	UP6CJ17	■ Filter
(B)	20	300							▲ Filter
(C)	20	25					PRS25-25		Cathode Bypass
8	10	250	A-51419	TC52	M-16-250	UT-122	PRS250-12	BR1225	Filter
9	.05	400	BD510503	TP426	S-4-05	TC-15	484-05	DT4S5	Line Bypass
10	.002	600	BD610202	TP405	S-6-002	TC-22	684-002	DT6D2	6K6 Plate Bypass
11	.02	400	BD410203	TP423	S-4-02	TC-12	484-02	DT4S2	Audio Coupling
12	.1	400	BD410104	TP428	S-4-1	TC-1	484-.1	DT4P1	Audio Plate Decoupling
13	.01	400	BD410103	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
14	.05	200	BD210503	TP426	S-4-05	TC-15	484-05	DT4S5	Tone Compensation
15	.05	400	BD210503	TP426	S-4-05	TC-15	484-05	DT4S5	IF Plate Bypass
16	.05	400	BD410503	TP426	S-4-05	TC-15	484-05	DT4S5	Conv. Screen Bypass
17	.05	200	BD410503	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
18	.05	200	BD210503	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
19	.1	400	BD410104	TP428	S-4-1	TC-1	484-.1	DT4P1	Screen Bypass
20	.002	600	BD610202	TP405	S-6-002	TC-22	684-002	DT6D2	Ant. Coupling
21	220	500	BM78A221	MC237	M0.5-32	1FM-32	1468-0002	5W5T2	Audio Plate Bypass
22	100	500	BM78A101	MC235	M0.5-31	1FM-31	1468-0001	5W5T1	Tone Compensation
23	5100	300	BM56D512	MC465	MW.5-25	1FM-25	1467-005	1D5D5	Fixed Padder
24	100	500	BM78A101	MC235	M0.5-31	1FM-31	1468-0001	5W5T1	Osc. Grid Capacitor

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DETROLA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
25(A)	500K	1	B-51445-1	TM233	D18-133X	AT88	Volume control
(B)	Shaft		Not Req.	S525	E	KSS-3	Attach to 25A per instr.
(C)	Switch		" "	M26	41	SW-A	" " " " "

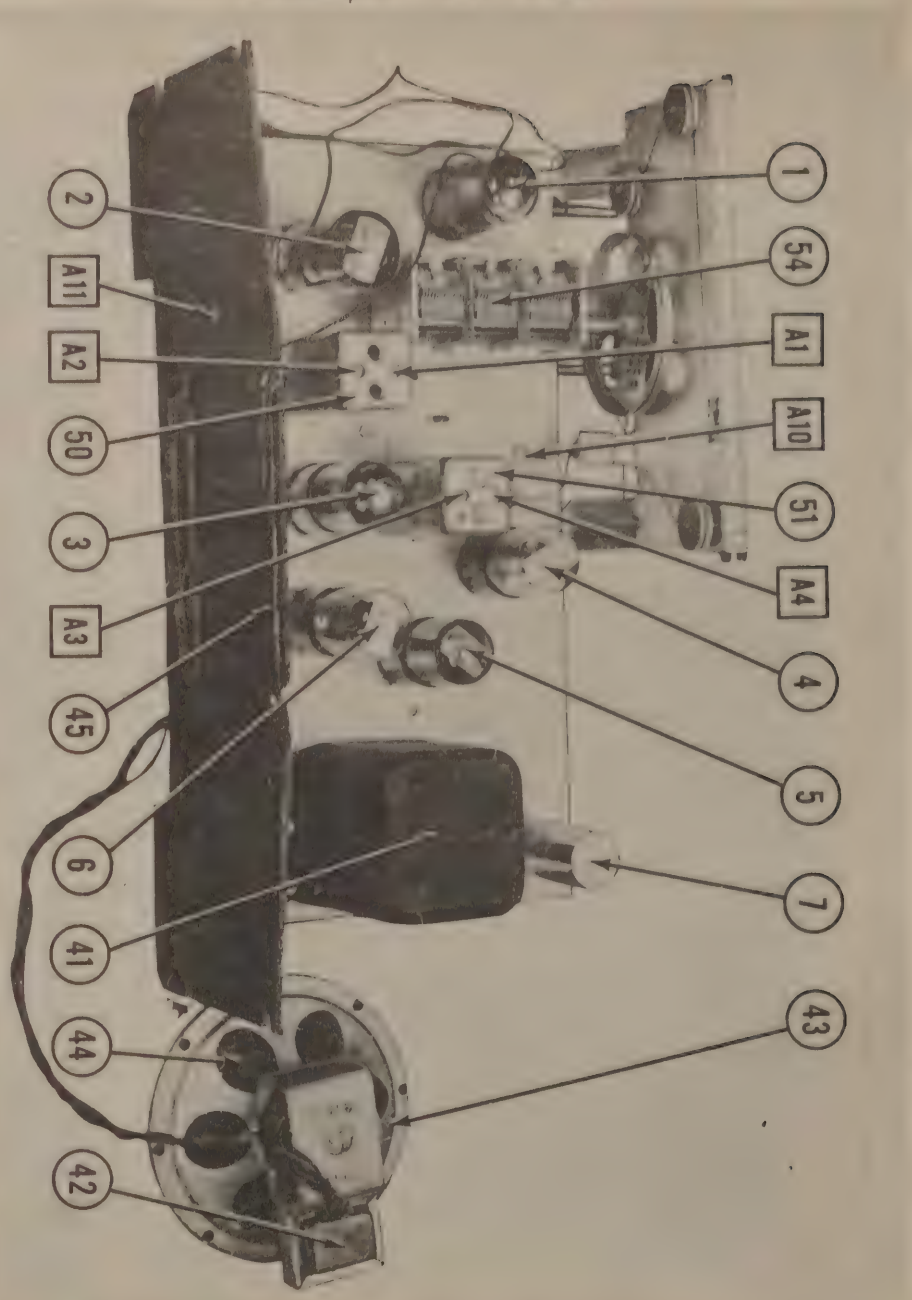
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DETROLA PART No.	IRC PART No.	IDENTIFICATION CODES
26	100KΩ	1/3	BR17B104	BTS-100K	Br.-Blk.-Yl. AVC Network
27	1000Ω	1/3	BR17B102	BTS-1000	Br.-Blk.-Red RF Coil Shunt
28	22KΩ	1/3	BR17B223	BTS-22K	Red-Red-Or. Osc. Grid
29	15 Meg.	1/3	BR17B156	BTS-15 Meg.	Br.-Grn.-Blue AVC Network
30	15Ω	1/3	BR17B150	BW-½-15	Br.-Grn.-Blk. Osc. Tuned Circuit
31	15KΩ	2	BR17G153	BT-2-15K	Br.-Grn.-Or. Osc. Screen Dropping
32	3.3 Meg.	1/3	BR17B335	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
33	22KΩ	1	BR17E223	BTA-22K	Red-Red-Or. Screen Dropping
34	1000Ω	1/3	BR17B102	BTS-1000	Br.-Blk.-Red IF Plate Filter
35	10KΩ	1/3	BR17B103	BTS-10K	Br.-Blk.-Or. Tone Compensation
36	6.8 Meg.	1/3	BR17B685	BTS-6.8 Meg.	Blue-Gray-Grn. 1st AF Grid
37	220KΩ	1/3	BR17B224	BTS-220K	Red-Red-Yl. 1st AF Plate Load
38	100KΩ	1/3	BR17B104	BTS-100K	Br.-Blk.-Yl. 1st AF Plate Filter
39	560Ω	1	BR16E561	BTA-560	Grn.-Blue-Br. Output Cathode
40	470KΩ	1/3	BR17B474	BTS-470K	Yl.-Vl.-Yl. Output Grid

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: DETROLA PART No.	STANCOR PART No.	THORDARSON PART No.	INSTALLATION NOTES
41	117VAC @ .55A	620VCT @ .073A	5.3VAC @ 1.8A	6.7VAC @ 1.8A	C-51421	P-6120*	T-22R02*	*Use universal mounting brack ets.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		DETROLA PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
42	5800Ω	3.3Ω	770Ω	.25Ω	Part of C-51413	A-38771	T-22S461		†Bend mounting tabs down, file out slots and mount on original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			DETROLA PART No.	JENSEN PART No.		
43	FIELD RES. 470Ω	V.C. IMP. 3.3Ω	C-51413	ST-450 Mod.H5-S		
44	CONE DIA. 4 3/4"	V.C. DIA. 1/2 "	NOT READILY REPLACEABLE - USE COMPLETE SPEAKER UNIT.			

R F COILS

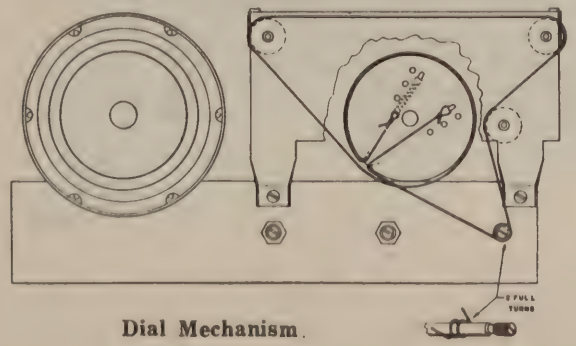
ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	DETROLA PART No.	MEISSNER PART No.	
45	Loop Ant.	0Ω	1Ω			
46	Loop Load Coil		2.5Ω	B51422		
47	SW Ant. Coil	.5Ω	0Ω	B51430	14-1044	
48A	BC RF Coil	36Ω	9Ω	B51425		48A, 48B on same form
48B	SW RF Coil	1.3Ω	0Ω	B51425		
49A	BC Osc. Coil	1Ω	6.1Ω	B51420		49A, 49B on same form
49B	SW Osc. Coil		0Ω	B51420		
50	Input IF	27.5Ω	22Ω	B51416-1	16-6658	
51	Output IF	28Ω		B51417-1	16-6670	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					DETROLA PART No.		
52	Bayonet	6-8	.25	Blue	A-9285		Type 44

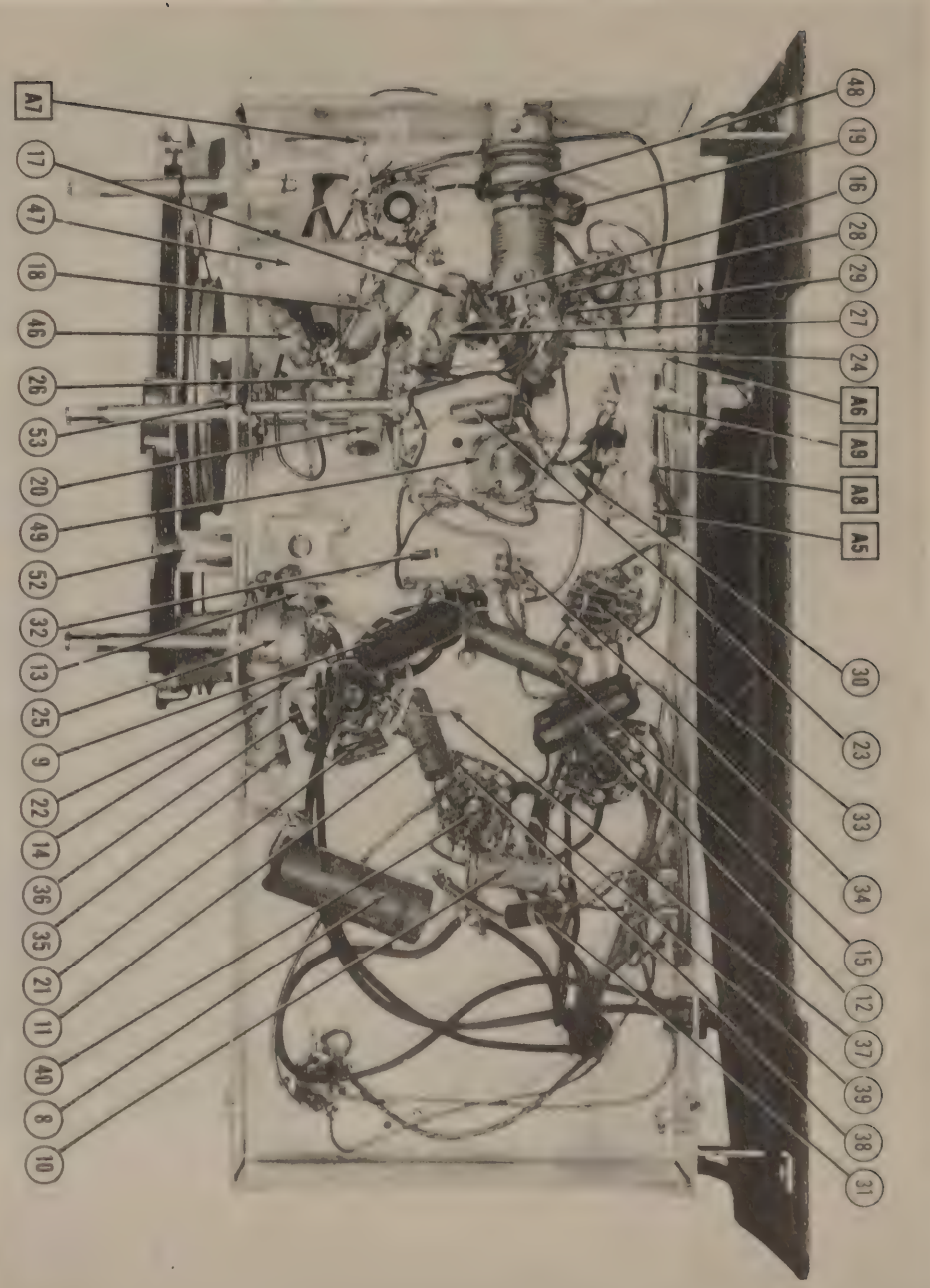
MISCELLANEOUS

ITEM No.	PART NAME	DETROLA PART No.	NOTES
53	Band Switch	B-51435-1	2 Position
54	Tuning Cap.	C-51401-1	3 Gang Variable Cap.
A5	Trimmer Assby.	A-51656	SW Osc. Adj.
A6			SW RF Adj.
A8			BC Osc. Adj.
A9			BC RF Adj.
A7	Trimmer Cap.	A-51657	SW Ant. Adj.
A10	Padder Cap.	B-51428-5	BC Padder Adj.
A11	Trimmer Cap.	B-51859-1	BC Ant. Adj.



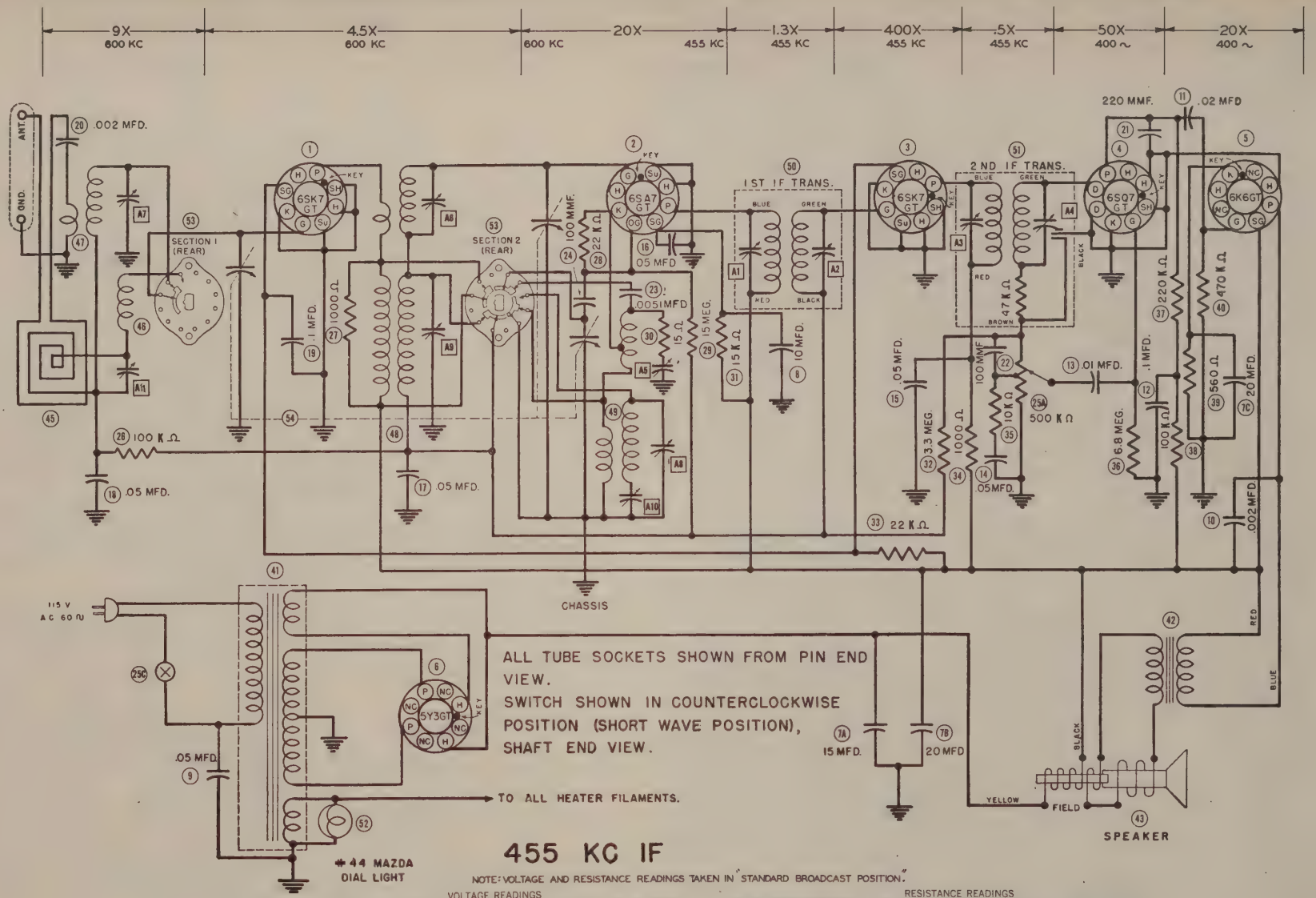
Dial Mechanism.

CHASSIS—BOTTOM VIEW



DETROLA
MODEL 572-220-226A

DETROLA
MODEL 572-220-226A



ALL TUBE SOCKETS SHOWN FROM PIN END VIEW.
SWITCH SHOWN IN COUNTERCLOCKWISE POSITION (SHORT WAVE POSITION), SHAFT END VIEW.

TO ALL HEATER FILAMENTS.

#44 MAZDA DIAL LIGHT

455 KC IF

NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN "STANDARD BROADCAST POSITION."

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7GT	0V.	0V.	0V.	-1V.DC	0V.	100V.DC	6.5V.AC	250V.DC
2	6SA7GT	0V.	0V.	250V.DC	98V.DC	-2V.DC	0V.	6.5V.AC	-1V.DC
3	6SK7GT	0V.	0V.	0V.	-1V.DC	0V.	100V.DC	6.5V.AC	240V.DC
4	6SQ7GT	0V.	-2V.DC	0V.	0V.	-35V.DC	103V.DC	6.5V.AC	0V.
5	6K6GT	0V.	0V.	233V.DC	250V.DC	0V.	205V.DC	6.5V.AC	18V.DC
6	5Y3GT/G	0V.	300V.DC	0V.	300V.AC	0V.	300V.AC	0V.	300V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7GT	0Ω	0Ω	0Ω	3.1MEG.	0Ω	122KΩ	.2Ω	100KΩ
2	6SA7GT	0Ω	0Ω	100KΩ	115KΩ	17.5KΩ	1Ω	.2Ω	3MEG.
3	6SK7GT	0Ω	0Ω	0Ω	3MEG.	0Ω	122KΩ	.2Ω	100KΩ
4	6SQ7GT	0Ω	6.5MEG.	0Ω	0Ω	460KΩ	420KΩ	.2Ω	0Ω
5	6K6GT	INF.	0Ω	100KΩ	100KΩ	370KΩ	200KΩ	.2Ω	500Ω
6	5Y3GT/G	0Ω	100KΩ	INF.	170Ω	0Ω	150Ω	INF.	100KΩ

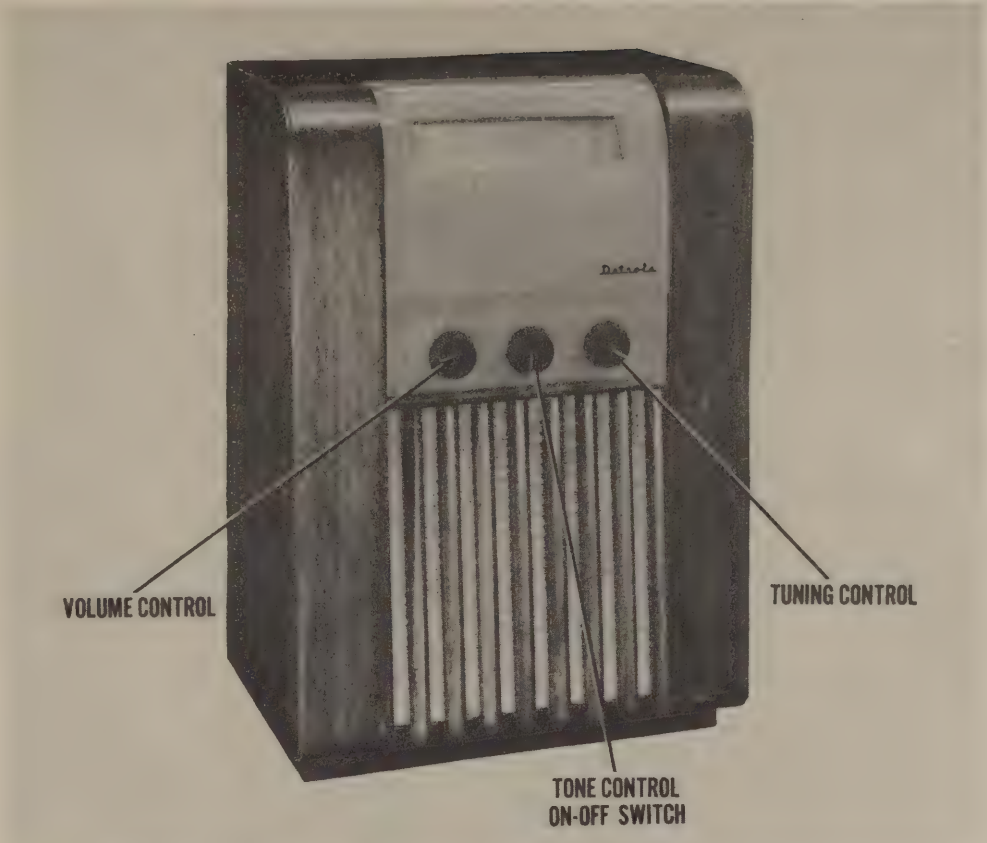
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

468-6

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



DETROLA MODEL 576-1-6A

TRADE NAME	Detrola Model 576-1-6A
SUPPLIER	International Detrola Corp., 1501 Beard St., Detroit, Michigan
TYPE SET	AC - DC Superheterodyne Receiver - Self Contained Loop Antenna
TUBES (SIX)	Types, 12SK7GT RF Amp., 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1600KC RATING .285 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

Use isolation transformer if available. If not, connect capacitor in series with low side of signal generator and B-. Set volume control at maximum volume position and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin 8 of 12SA7. Low side to B-.	455KC	High freq.end of dial.(Variable fully open)	Across voice coil.	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD. to reduce excessive hum modulation.
	Loop	1620KC	"	"	A5	Connect output of signal generator to two turns of wire and radiate signal into receiver loop. Adjust for maximum output.
	"	1400KC	Tune for maximum output.	"	A6,A7.	"

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: DETROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12SK7GT	12SK7GT	8N	
2	Converter	12SA7GT	12SA7GT	8AD	
3	IF Amp.	12SK7GT	12SK7GT	8N	
4	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
5	Power Output	35L6GT	35L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: DETROLA PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	A-8948	FP306*	DY-40+20-150	EL-24	AF84D20A*	UP4215	■ Filter
B	20	150							▲ "
8	.05	400	BC31B503	TP426	S-4-05	TC-15	484-05	DT4S5	Line Filter
9	.002	600	BD610202	TP405	S-6-002	TC-22	684-002	DT6D2	35L6 Plate Bypass
10	.005	600	BD610502	TP408	S-6-005	TC-25	684-005	DT6D5	Tone Compensation
11	.02	400	BD410203	TP423	S-4-02	TC-12	484-02	DT4S2	Audio Coupling
12	.01	400	BD410103	TP421	S-4-01	TC-11	484-01	DT4S1	" "
13	.03	200	BD210303	TP424	S-6-03	TC-13	484-03	DT4S3	Tone Compensation
14	.1	400	BD410104	TP428	S-4-1	TC-1	484-.1	DT4P1	Line Isolating
15	.1	400	BD410104	TP428	S-4-1	TC-1	484-.1	DT4P1	Audio Plate Decoup.
16	.05	200	BD210503	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
17	220	500	BM78A221	MC237	M0.5-32	1FM-32	1468-0002	5W5T2	Audio Plate Bypass
18	100	500	BM78A101	MC235	M0.5-31	1FM-31	1468-0001	5W5T1	Tone Compensation
19	47	500	BM78A470	MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor
20	150	500	BM78A151	MC236	M0.5-315	1FM-315	1468-00015	5W5T15	RF Pri. Shunt

*Do not use bypass section.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DETROLA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
21A	500KΩ	1	B-51725-2	TM233	D18-133X	AT-88	Volume Control
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 21A per instructions
22A	500KΩ	1	B-51724-1	MK401	D13-133	AM-60-Z	Tone Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 22A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

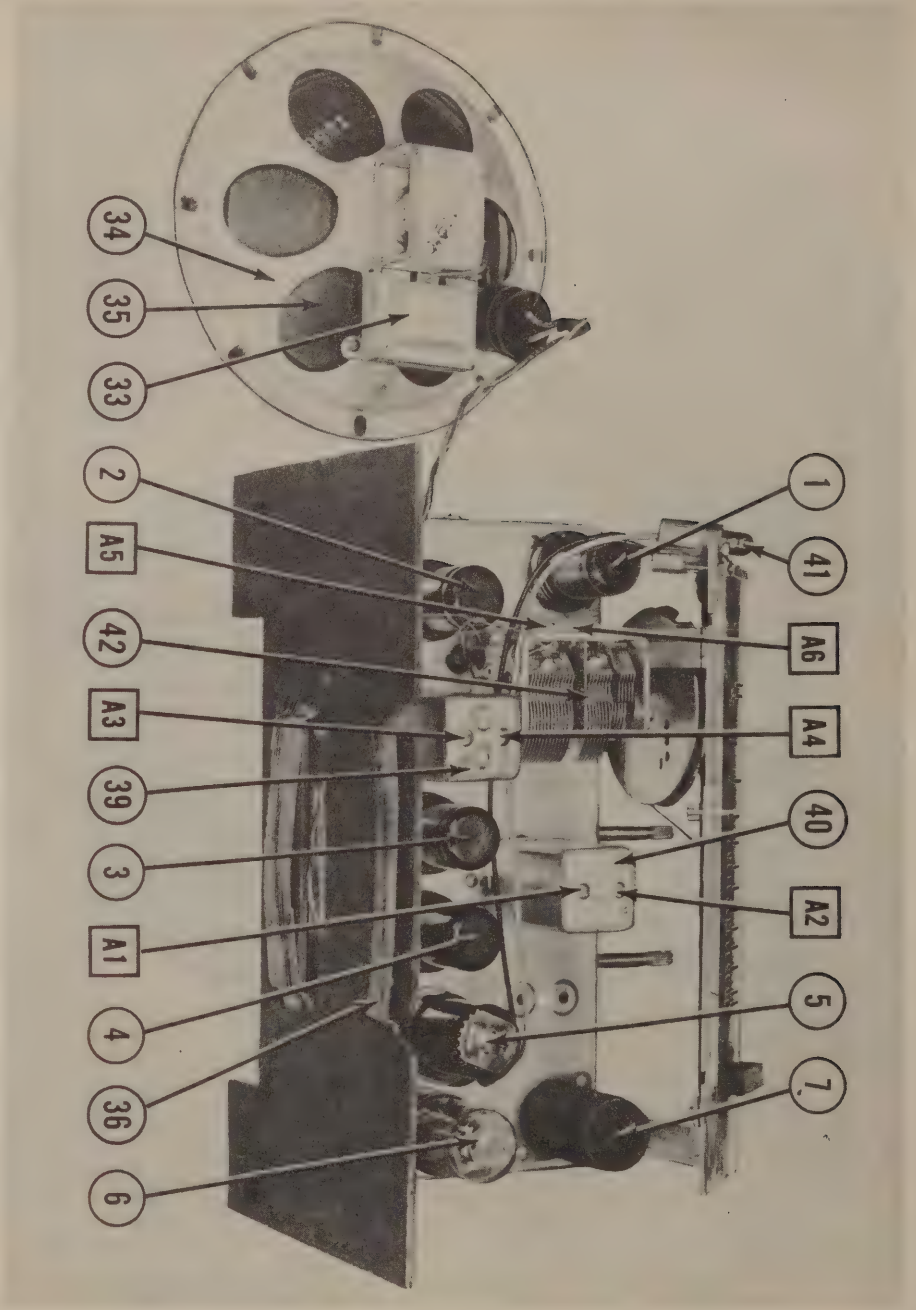
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DETROLA PART No.	IRC PART No.	IDENTIFICATION CODES
23	22KΩ	1/3	BR17B223	BTS-22K	Red-Red-Or. Osc. Grid
24	15 Meg.	1/3	BR17B156	BTS-15 Meg.	Br.-Grn.-Blue AVC Network
25	220KΩ	1/3	BR17B224	BTS-220K	Red-Red-Yl. Line Isolating
26	15KΩ	1/3	BR17B153	BTS-15K	Br.-Grn.-Or. Tone Compensation
27	3.3 Meg.	1/3	BR17B335	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
28	6.8 Meg.	1/3	BR17B685	BTS-6.8 Meg.	Blue-Gray-Grn. 1st AF Grid
29	220KΩ	1/3	BR17B224	BTS-220K	Red-Red-Yl. 1st AF Plate Load
30	100KΩ	1/3	BR17B104	BTS-100K	Br.-Blk.-Yl. 1st AF Plate Filter
31	150Ω	1/2	BR16C151	BW-½-150	Br.-Grn.-Br. Output Cathode

FILTER CHOKE

ITEM NO.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000∿)	REPLACEMENT DATA: DETROLA PART NO.	STANCOR PART NO.	THORDARSON PART NO.	INSTALLATION NOTES
32	78MA	100Ω	4.5 Henries	B-51726-1	C-1355		

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA DETROLA PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDAR'N PART No.	REPLACEMENT DATA	INSTALLATION NOTES
33	1900Ω	3.1Ω	240Ω	.65Ω		A-3876†	T-22S46†		†Bend mounting tabs down, file out slots and mount on original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA DETROLA PART No.	REPLACEMENT DATA JENSEN PART No.	REPLACEMENT DATA	INSTALLATION NOTES
	FIELD	VC IMP.		ST-110		
34	PM	3.1Ω	C-51722	Mod. P6-V		
	CONE DIA.	VC DIA.				
35	6"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

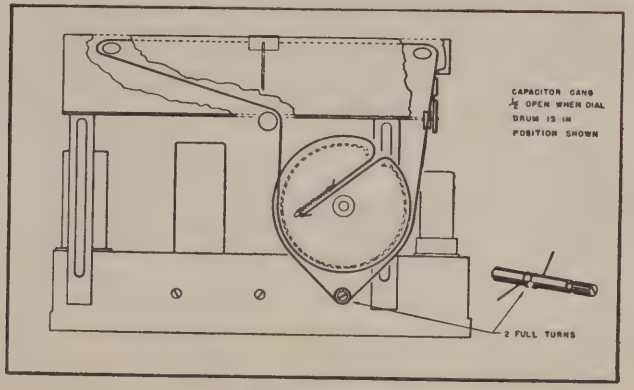
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA DETROLA PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
36	Loop Ant.		1Ω			
37	RF Coil	34Ω	13Ω	B51257	14-1027	
38	Osc. Coil	1Ω	9.3Ω	B51256		
39	Input IF	29Ω	22Ω	B51010-1	16-6658	
40	Output IF	34Ω		B51011-1	16-6670	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA DETROLA PART No.	REPLACEMENT DATA	INSTALLATION NOTES
41	Bayonet	6-8	.15	Brown	A-6158		Type 47

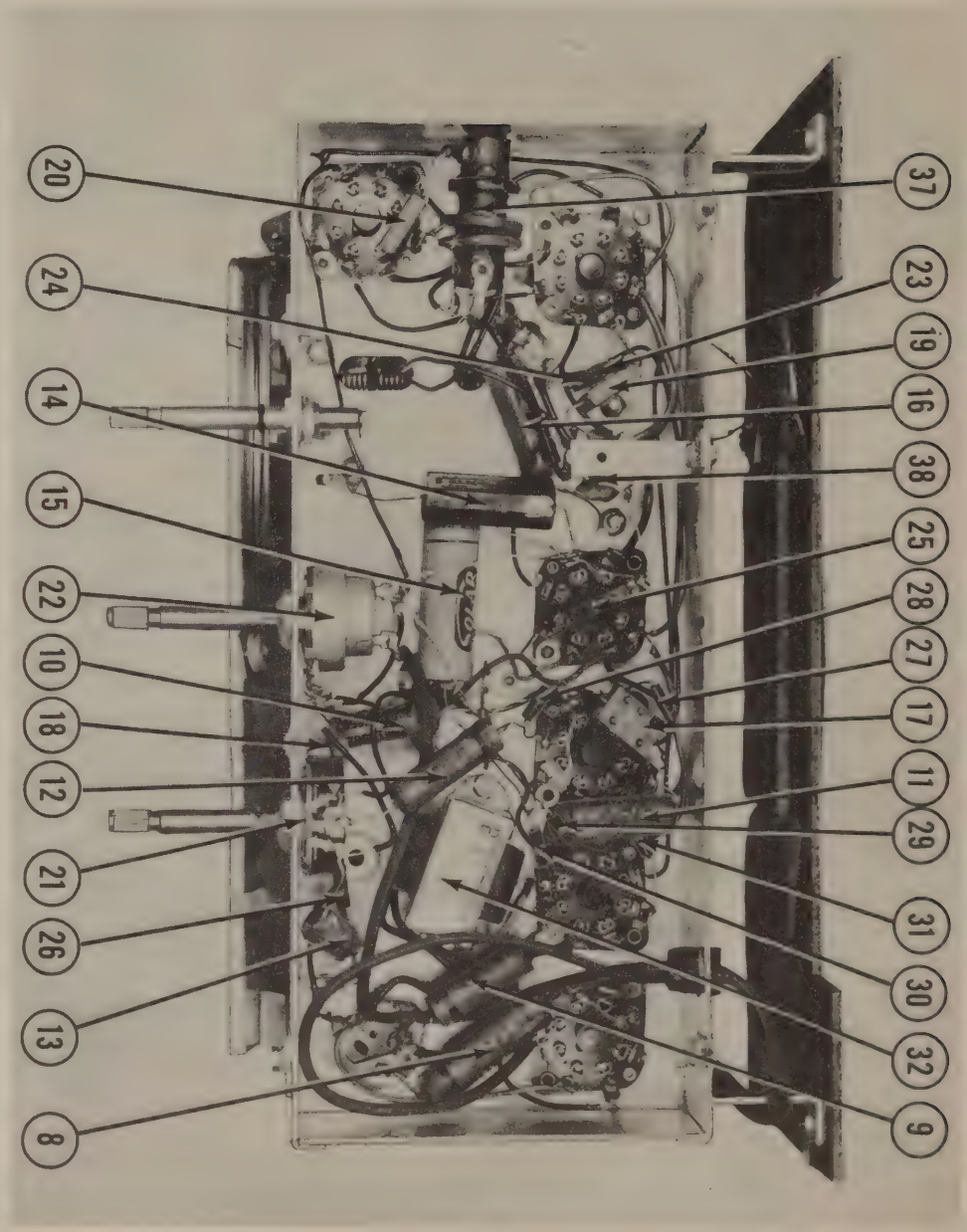
MISCELLANEOUS

ITEM No.	PART NAME	DETROLA PART No.	NOTES
42	Tuning Cap.	C-51251	3 Gang Variable Cap.

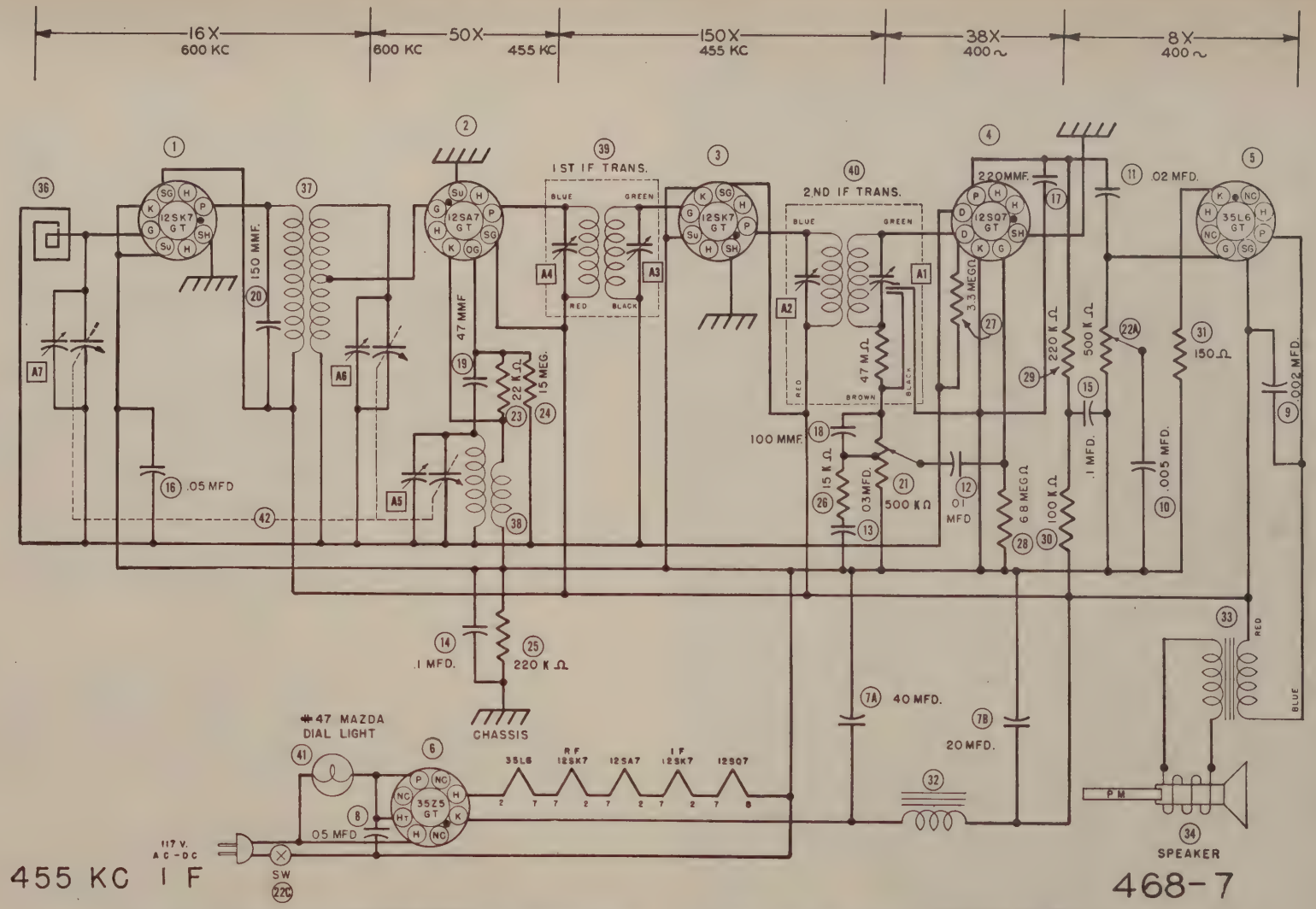


Dial Mechanism

CHASSIS—BOTTOM VIEW



DETROLA MODEL 576-1-6A



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT	0V.	46.5V.AC	0V.	-7V.DC	0V.	100V.DC	35.5V.AC	100V.DC
2	12SA7GT	0V.	35.5V.AC	100V.DC	100V.DC	-1.45V DC	0V.	24V.AC	-7V.DC
3	12SK7GT	0V.	24V.AC	0V.	-7V.DC	0V.	100V.DC	12.5V.AC	100V.DC
4	12SQ7GT	0V.	-55V.DC	0V.	-3V.DC	-7V.DC	53V.DC	12.5V.AC	0V.
5	35L6GT	0V.	87V.AC	92V.DC	100V.DC	0V.	53V.DC	46.5V.AC	6.2V.DC
6	35Z5GT	0V.	117V.AC	112V.AC	0V.	112V.AC	0V.	87V.AC	110V.DC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

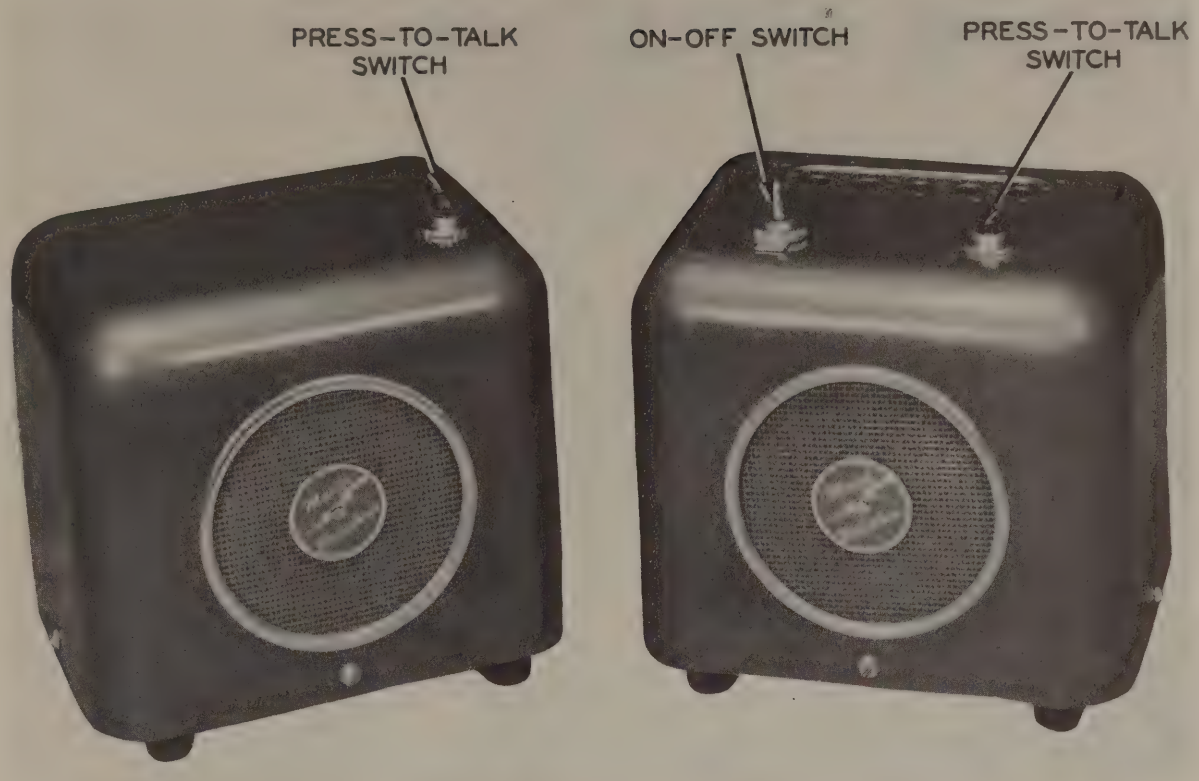
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT	190 KΩ	42Ω	0Ω	2.7MEG.	0Ω	29KΩ	32Ω	29KΩ
2	12SA7GT	190 KΩ	32Ω	29KΩ	29KΩ	20.5KΩ	1Ω	22Ω	2.7MEG.
3	12SK7GT	190KΩ	22Ω	0Ω	2.7MEG.	0Ω	29KΩ	12Ω	29KΩ
4	12SQ7GT	190KΩ	6.5MEG.	0Ω	460KΩ	2.7MEG	350KΩ	12Ω	0Ω
5	35L6GT	INF.	73Ω	29KΩ	29KΩ	430KΩ	350KΩ	42Ω	125Ω
6	35Z5GT	INF.	99Ω	96Ω	INF.	96Ω	INF.	73Ω	29KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



E-L
MODEL 2660

E-L
MODEL 2660

E/L (ELECTRONIC LABS.) MODEL 2660

TRADE NAME	E/L (Electronic Labs.) Model 2660 Utiliphone
MANUFACTURER	Electronic Laboratories, Inc., 122 West New York, Indianapolis, Ind.
TYPE SET	AC - DC 2 Station Intercommunication System
TUBES (THREE)	Types, 14A7 AF Amp., 50A5 Power Output, 35Y4 Rectifier
POWER SUPPLY RATING	110 Volts AC-DC .220 Amps. @ 117V AC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14A7	0V.	34V.DC	9V.DC	0V.	0V.	-.65V.DC	0V.	12.8V.AC
2	50A5	63V.AC	117V.DC	117V.DC	0V.	0V.	0V.	7.2V.DC	12.8V.AC
3	35Y4	63V.AC	116V.AC	117V.DC	71V.AC	117V.AC	117V.AC	124V.DC	97V.AC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14A7	0Ω	405KΩ	2.3MEG	0Ω	0Ω	975KΩ	0Ω	12Ω
2	50A5	56Ω	75KΩ	75KΩ	0Ω	INF.	530KΩ	150Ω	12Ω
3	35Y4	56Ω	235Ω	75KΩ	65Ω	212Ω	212Ω	75KΩ	90Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. No signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		ELECT. LABS PART No.	STANDARD REPLACEMENT		
1	AF Amp.	H-233A	14A7	8V	
2	Power Output	H-231A	50A5	6AA	
3	Rectifier	H-232A	35Y4	5AL	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	ELECT. LABS PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
4A	40	150	C-466A	2N511	M-2x40-150	TA-440	PRSA150-40-40	BRL4415	Filter
B	40	150							"
5	25	25	C-462A	TC26	M-25-25	TA-25	PRS25-25	BR252A	Cath. Bypass
6	.1	400	C-471A	TP428	S-4-1	TC-1	484-.1	DT4P1	Line Filter
7	.01	200	C-468A	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
8	.05	200	C-467A	TP426	S-4-05	TC-15	484-05	DT4S5	Screen Bypass
9	.05	200	C-467A	TP426	S-4-05	TC-15	484-05	DT4S5	Grid Coupling
10	1000	500	C-473A	MC455	MO.3-21	1FM-21	1467-001	1W5D1	Audio Plate Bypass

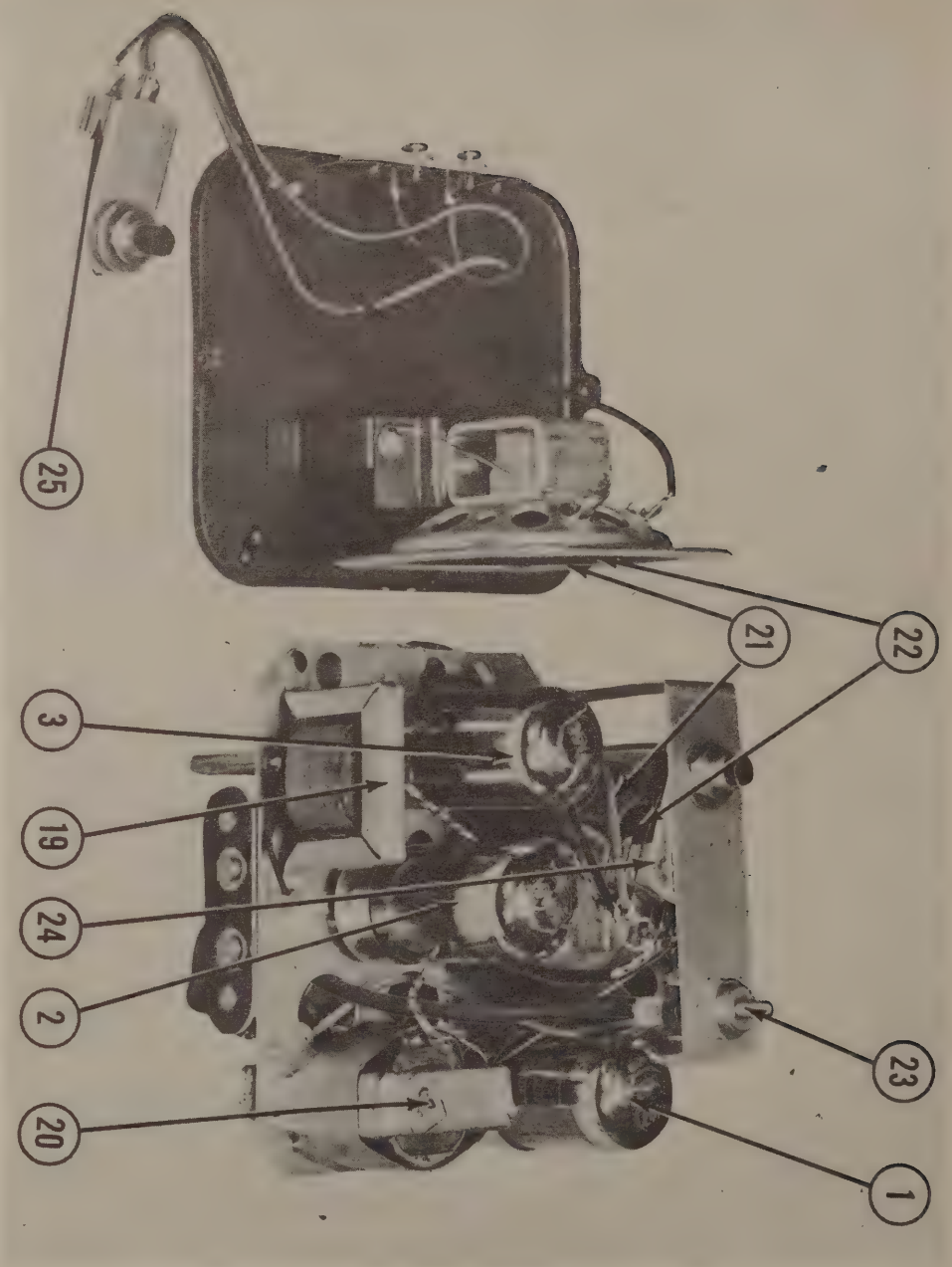
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	ELECT. LABS PART No.	IRC PART No.	
11	1 Meg.	½	W-417A	BTS-1 Meg.	Br.-Blk.-Grn. 1st AF Grid
12	2.2 Meg.	½	W-419A	BTS-2.2 Meg.	Red-Red-Grn. 1st AF Screen Dropping
13	330KΩ	¼	W-411A	BTS-330K	Or.-Or.-Yl. 1st AF Plate Load
14	510KΩ	¼	W-410A	BTS-470K	Grn.-Br.-Yl. Output Grid
15	150Ω	½	W-415A	BW-½-150	Br.-Grn.-Br. Output Cathode
16	2200Ω	½	W-418A	BTS-2200	Red-Red-Red Filter
17	25Ω	½	W-409A	BW-½-22	Rectifier Ballast
18	133Ω	10	W-408A	AB-150	Line Dropping

TRANSFORMER (MICROPHONE)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ELECT. LABS PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
19	3.2Ω	17000Ω	.45Ω	600Ω	TR-4280A	A-3496	T-22S48		

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ELECT. LABS.	STANCOR	THORDAR'N		
	PRI.	SEC.	PRI.	SEC.	PART No.	PART No.	PART No.		
20	1500Ω	3.2Ω	135Ω	.85Ω	TR-4285A	A-3876*	T-22S45		*Drill one new mounting hole.

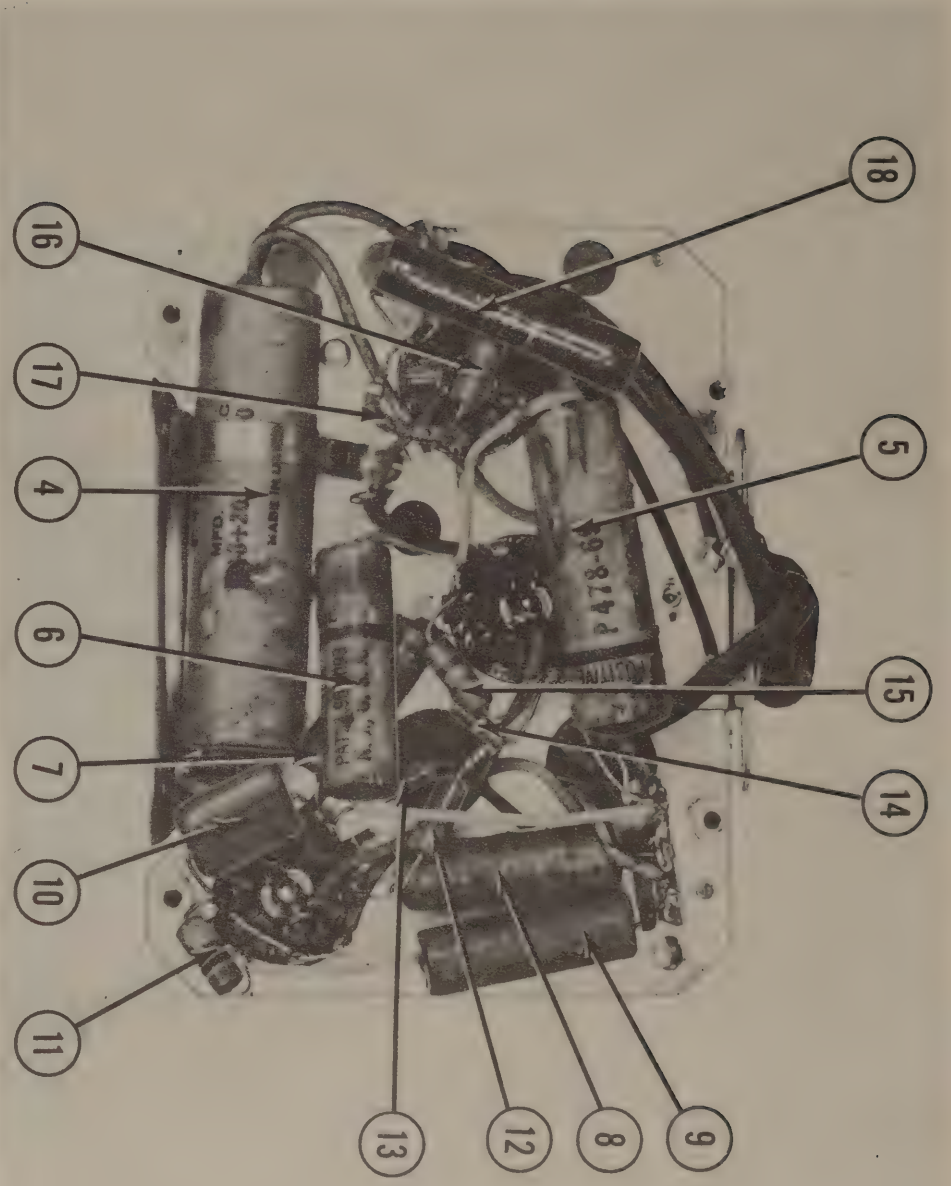
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			ELECT. LABS. PART No.	JENSEN PART No.		
21	FIELD PM	VC IMP. 3.2Ω	H-235A	ST-113 Mod. P4-X		
22	CONE DIA. 3"	VC DIA. 1/2"	NOT READILY	REPLACEABLE	E-USE COMPLETE SPEAKER UNIT	

MISCELLANEOUS

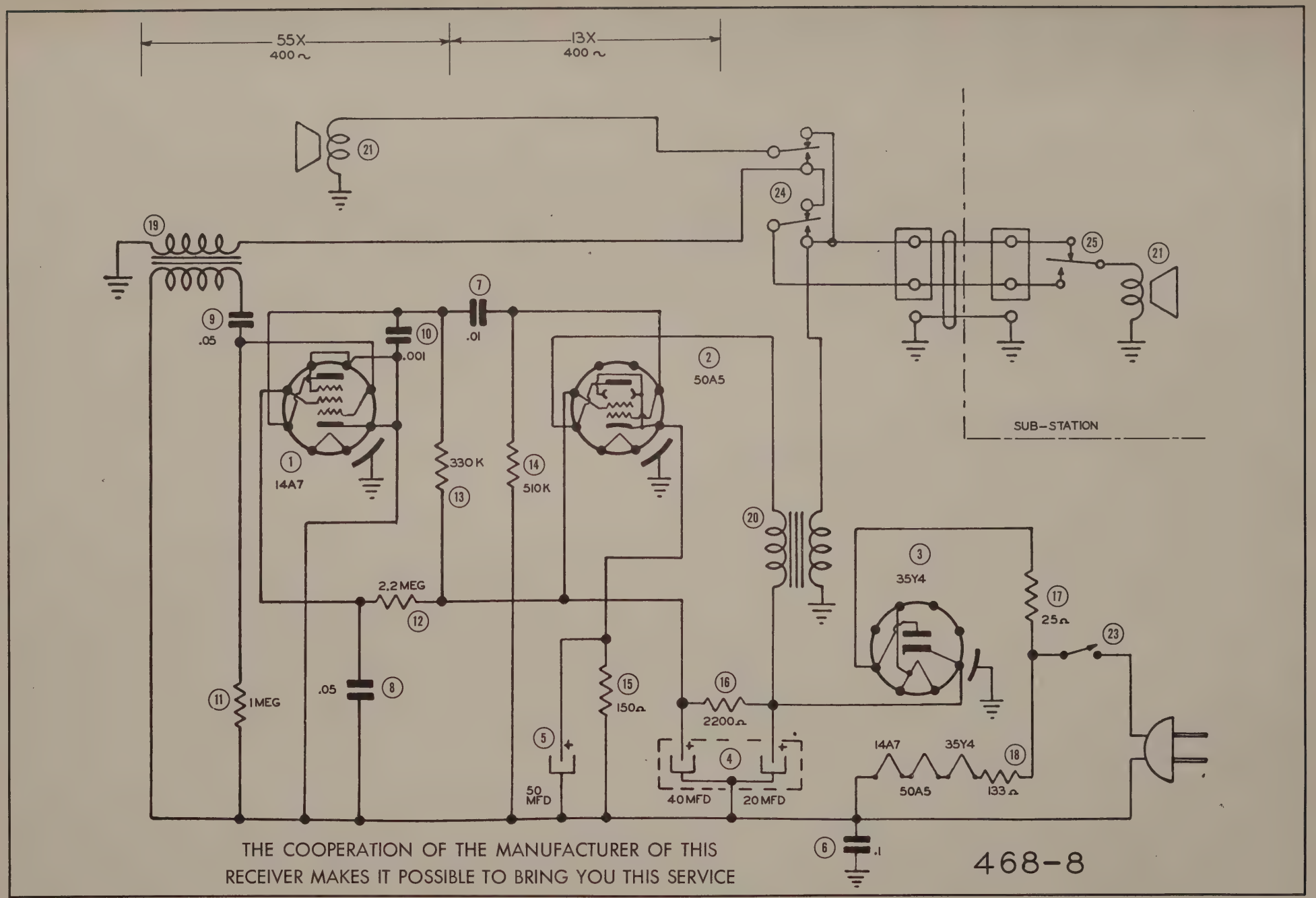
ITEM No.	PART NAME	ELECT. LABS. PART No.	NOTES
23	On-Off Switch	E-161A	Toggle Sw. S.P.S.T.
24	Switch	E-159A	Talk-Listen D.P.D.T.
25	"	E-162B	" " S.P.D.T.
	Conductor Cable	XA-384A	50' 3 Conductor Cable

CHASSIS—BOTTOM VIEW



E/L UTILIPHONE MODEL 2660

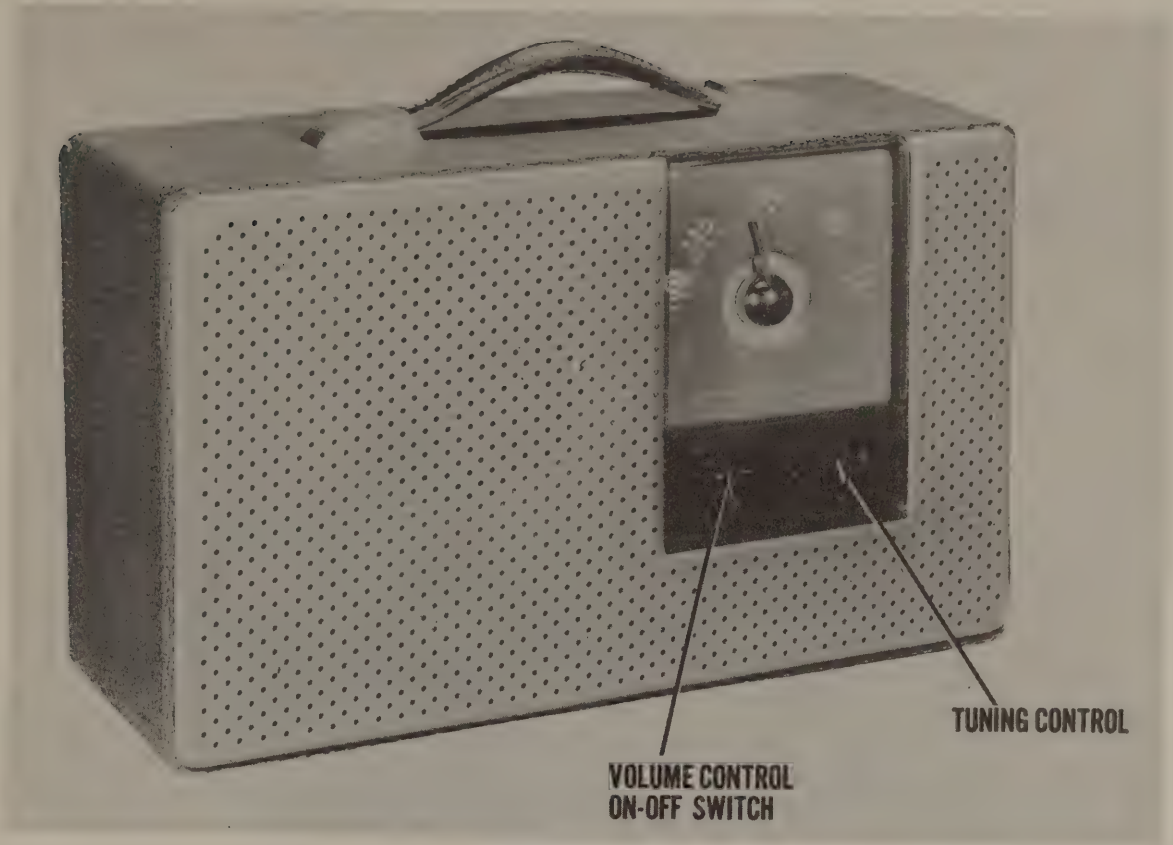
E/L UTILIPHONE MODEL 2660



THE COOPERATION OF THE MANUFACTURER OF THIS
RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

468-8

EMERSON
MODEL 505



EMERSON
MODEL 505

EMERSON MODEL 505

TRADE NAME	Emerson Model 505 (Chassis Model 120002)
MANUFACTURER	Emerson Radio & Phono. Corp. 111 8th Ave., New York, N.Y.
TYPE SET	Three Power Portable AC-DC Battery Superheterodyne, Self Contained Loop Antenna
TUBES (SIX)	Types, 1T4 RF Amp., 1R5 Converter, 1T4 IF Amp., 1S5 Det.-AVC-AF, 3Q4 Power Output, 117N7GT Power Output & Rectifier.
POWER SUPPLY	105-125 Volts AC-DC or 2-4½V "A" Batteries (Eveready #746 or equivalent): 2-45V "B" Batteries (Eveready #482 Minimax or equivalent.)
TUNING RANGE—BROADCAST	540-1620KC RATING .180 Amps. @ 117V AC - 50MA @ 9V DC & 11.9MA @ 90V DC

ALIGNMENT INSTRUCTIONS

When aligning receiver on AC-DC operation use isolation transformer if available. If not connect capacitor in series with low side of signal generator to chassis. Volume control at maximum volume position and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to stator of front section of variable. Low side to chassis.	262KC	High freq. end of dial. (Variable fully open)	Across voice coil	A1,A2, A3.	Adjust for maximum output.
200 MMF.	High side to stator of rear section of variable. Low side to chassis.	1425KC	1425KC	"	A4,A5.	Adjust for maximum output in order given.
200 MMF.	"	600KC	Tune for maximum output.	"	A6	Rock dial and adjust for maximum output.
	Loop	1425KC	"	"	A7	Connect signal generator to a coil of three or four turns of wire wound 12" in diameter. Place coil parallel to and in line with the receiver's loop at a distance of 15 to 20 inches. Adjust for maximum output.
	"	600KC	"	"	48	Adjust loose outside turn of the loop ant. for maximum output. Recheck A4, A5 and A6 at 1425KC.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: EMERSON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	1T4	1T4	6AR	
2	Converter	1R5	1R5	7AT	
3	IF Amp.	1T4	1T4	6AR	
4	Det.-AVC-AF	1S5	1S5	6AU	
5	Power Output	3Q4	3Q4	7BA	
6	Power Output & Rectifier	117N7GT	117N7GT	8AV	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: EMERSON PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	20	135	925050	2N514	M-40+20-150	TA-240	PRSA150-40-40	BRL4215	Filter - Red
B	40	135							" "
8	100	25	925090	TC2501	M-100-50		PRS25-100		Cath. Bypass
9	.05	400	920030	TP426	S-4-05	TC-15	484-05	DT4S5	Line Filter
10	.25	100	920110	TP430	S-4-25	TC-2	484-.25	DT4P25	Filament Bypass
11	.02	200	920100	TP423	S-4-02	TC-12	484-02	DT4S2	" "
12	.01	400	920090	TP421	S-4-01	TC-11	484-01	DT4S1	117N7 Plate Bypass
13	.002	600	920010	TP405	S-6-002	TC-22	684-002	DT6D2	3Q4 Plate Bypass
14	.02	200	920100	TP423	S-4-02	TC-12	484-02	DT4S2	Audio Coupling
15	.01	400	920090	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Screen Bypass
16	.02	200	920100	TP423	S-4-02	TC-12	484-02	DT4S2	Audio Coupling
17	.05	200	920060	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
18	.02	200	920100	TP423	S-4-02	TC-12	484-02	DT4S2	" "
19	.02	400	920020	TP423	S-4-02	TC-12	484-02	DT4S2	Plate Bypass
20	.02	200	920100	TP423	S-4-02	TC-12	484-02	DT4S2	Screen Bypass
21	.05	200	920060	TP426	S-4-05	TC-15	484-05	DT4S5	RF Coupling
22	.002	600	920010	TP405	S-6-002	TC-22	684-002	DT6D2	Ant. Coupling
23	400	500	910050	MC243	M0.5-34	1FM-34	1468-0004	5W5T4	Audio Plate Bypass
24	110	500	910010	MC235	M0.5-31	1FM-31	1468-0001	5W5T1	IF Bypass Vol. Cont.

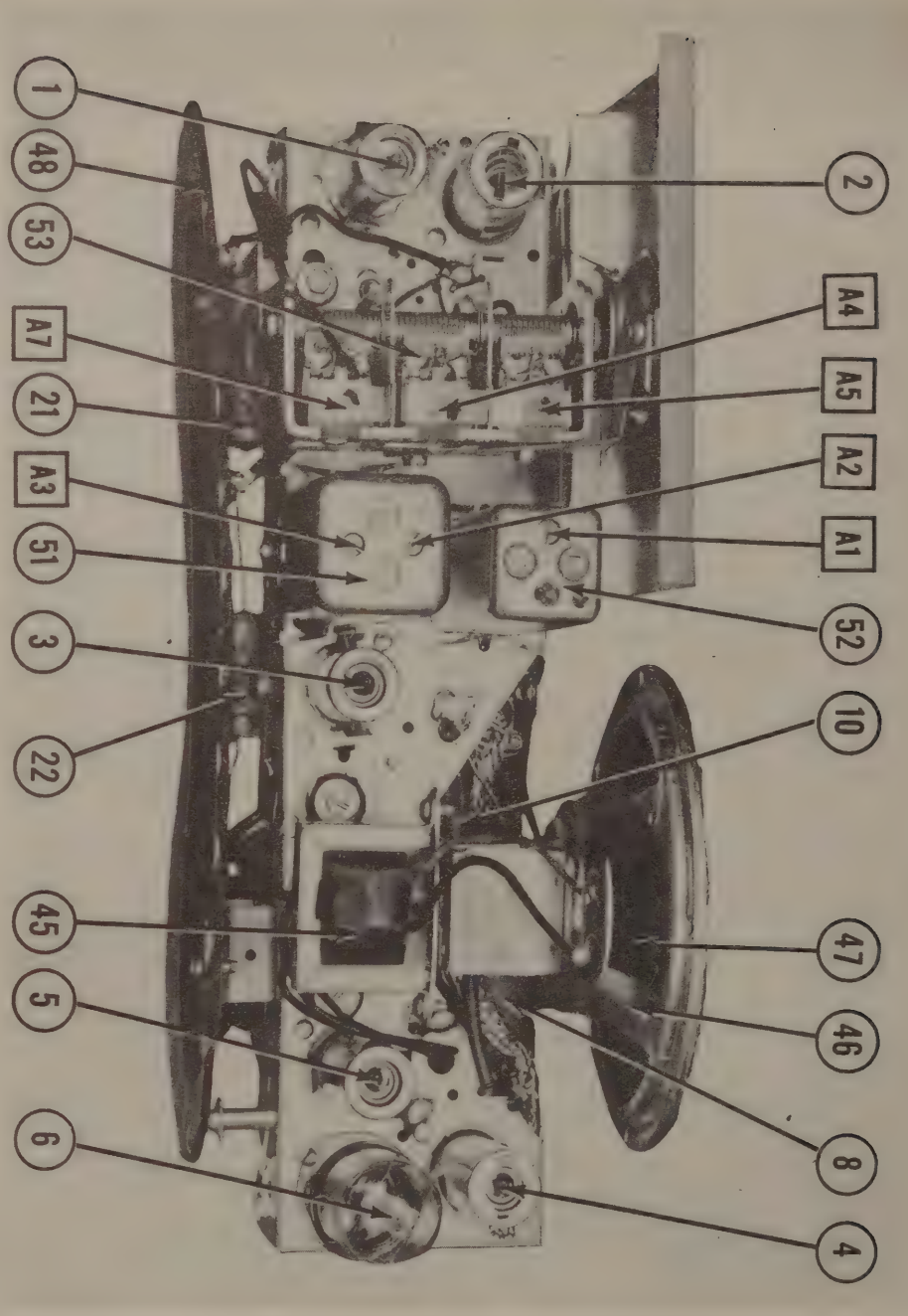
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
25A	500KΩ	1	390020	MR50	D11-133	AM-58-S	Volume Control
B	Shaft		Not Req.	Not Req.	A	KSS-3	Attach to 25A per instructions
C	Switch		" "	M27	42	SW-A2	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	IRC PART No.	IDENTIFICATION CODES
26	3.3 Meg.	¼	311330	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
27	100KΩ	¼	310970	BTS-100K	Br.-Blk.-Yl. Oscillator Grid
28	3.3 Meg.	¼	311330	BTS-3.3 Meg.	Or.-Or.-Grn. IF Grid
29	3.3 Meg.	¼	311330	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
30	3.3 Meg.	¼	311330	BTS-3.3 Meg.	Or.-Or.-Grn. " "
31	2.2 Meg.	¼	321290	BTS-2.2 Meg.	Red-Red-Grn. " "
32	5.6 Meg.	¼	311390	BTS-5.6 Meg.	Grn.-Blue-Grn. 1st AF Grid
33	3.3 Meg.	¼	311330	BTS-3.3 Meg.	Or.-Or.-Grn. 1st AF Screen Dropping
34	3.3 Meg.	¼	311330	BTS-3.3 Meg.	Or.-Or.-Grn. Feedback
35	470KΩ	¼	321130	BTS-470K	Yl.-Vi.-Yl. 1st AF Plate Load
36	470KΩ	¼	321130	BTS-470K	Yl.-Vi.-Yl. Battery Output Grid
37	10 Meg.	¼	321450	BTS-10 Meg.	Br.-Blk.-Blue AC-DC Output Grid
38	3300Ω	¼	310610	BTS-3300	Or.-Or.-Red Output Cathode
39	33Ω	¼	310130	BW-½-33	Or.-Or.-Blk. Filament String
40	15KΩ	½	340770	BTS-15K	Br.-Grn.-Or. Screen Dropping
41	3900Ω	½	340630	BTS-3900	Or.-white-Red Plate Dropping
42	2200Ω	¼	310570	BTS-2200	Red-Red-Red Filament String
43	680Ω	¼	310450	BTS-680	Blue-Gray-Br. " "

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA			INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000~)	EMERSON PART NO.	STANCOR PART NO.	THORDARSON PART NO.	
44	55MA	500Ω	8 Henries	737010	C-1215*	T-14C64	*Drill new mounting holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		EMERSON PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
45	9000Ω tapped @ 2400Ω	3.3Ω	342Ω tapped @ 166Ω	.5Ω	734040		T-22S47		

SPEAKER

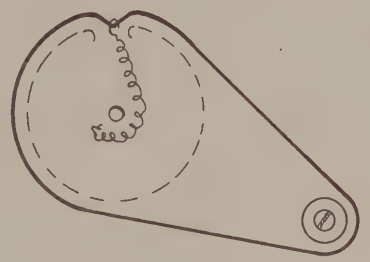
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			EMERSON PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-107		
46	PM	3.3Ω	180006	Mod. P5-V		
	CONE DIA.	VC DIA.				
47	4¾"	½"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	EMERSON PART No.	MEISSNER PART No.	
48	Loop Ant.		1.5Ω	700090		
49	RF Coil	100Ω	4.5Ω	713000		
50	Osc. Coil	2.5Ω	7.5Ω	716030	14-1040†	†Add 50 MMFD. cap from grid to high side tuning cap.
51	Input IF	82Ω	83Ω	720170	16-6652	
52	Output IF	97Ω		720190	16-6654‡	‡From low side of secondary, add 47KΩ resistor in series with ungrounded end of volume control and 100 MMFD to ground.

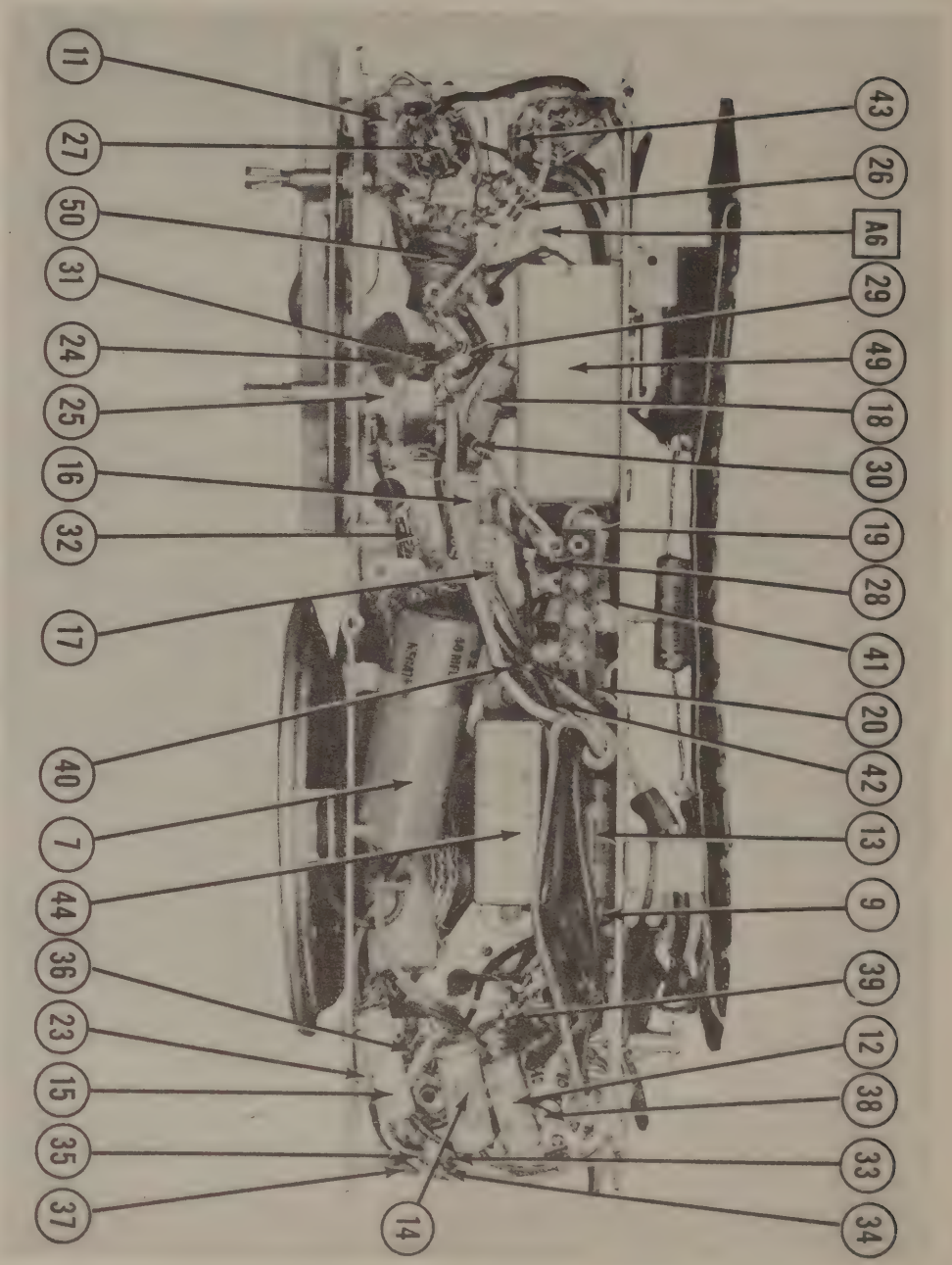
MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
53	Tuning Cap.	900080	3 Gang Variable Cap.
A7	Padder Cap.	900110	Osc. Pad. Adj.
	Cabinet	140002	
	Knob	460470	
	Pointer Assby.	525120	
	Dial Crystal	460040	

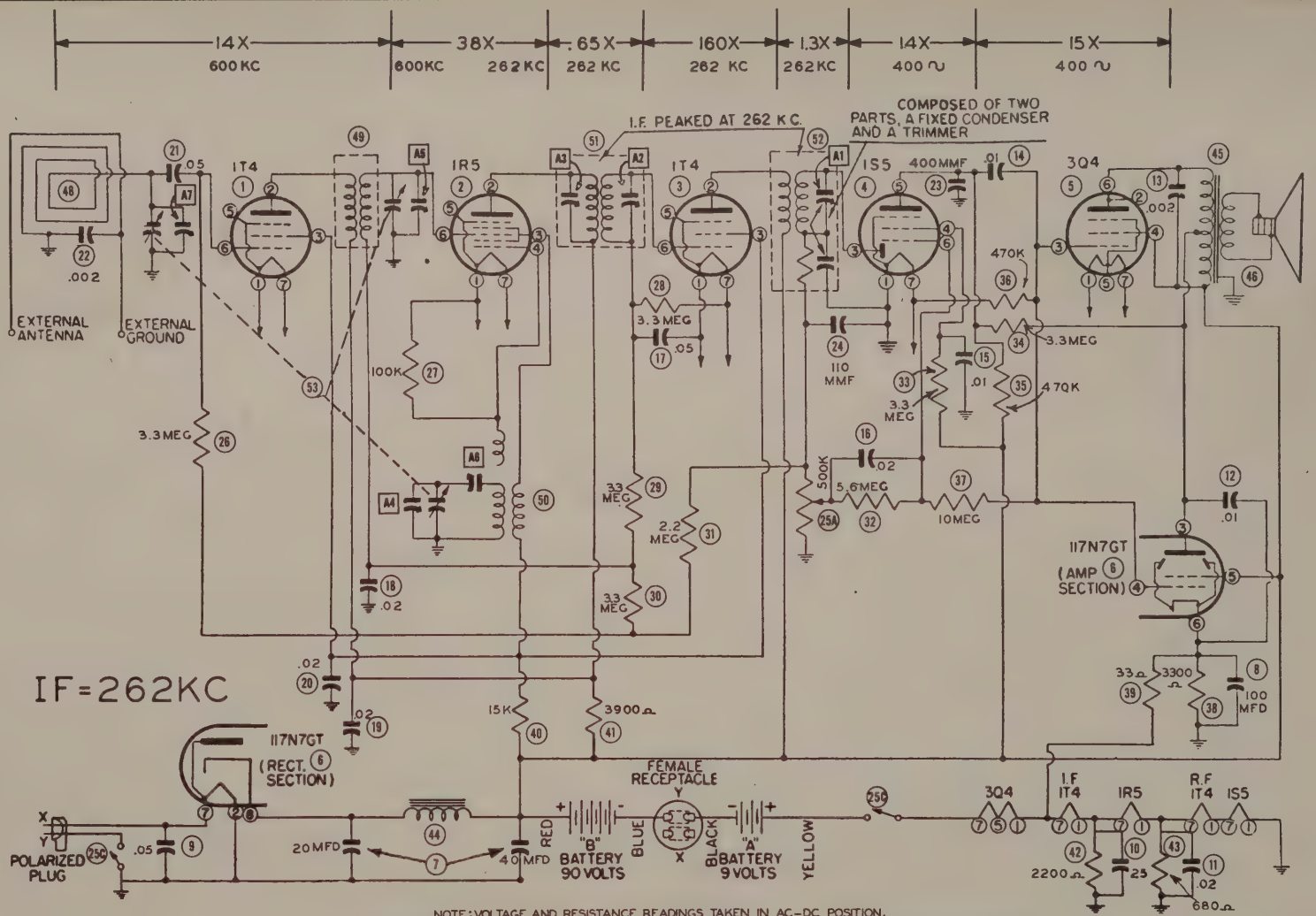


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



EMERSON MODEL 506



NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN AC-DC POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	1T4	1.3V.DC	87V.DC	62V.DC	0V.	1.3V.DC	0V.	2.5V.DC	
2	1R5	2.5V.DC	87V.DC	62V.DC	1.8V.DC	2.5V.DC	.2V.DC	3.6V.DC	
3	1T4	3.6V.DC	98V.DC	62V.DC	0V.	3.6V.DC	1V.DC	5V.DC	
4	1S5	0V.	0V.	0V.	17V.DC	47V.DC	0V.	1.3V.DC	
5	3Q4	5V.DC	92V.DC	1V.DC	98V.DC	5V.DC	92V.DC	5V.DC	
6	117N7	0V.	0V.	92V.DC	1V.DC	98V.DC	6.5V.DC	117VAC	125V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	1T4	*	189KΩ	200KΩ	INF.	*	5MEG.	*	
2	1R5	*	189KΩ	200KΩ	90KΩ	*	3.1MEG.	*	
3	1T4	*	185KΩ	200KΩ	INF.	*	2.3MEG.	*	
4	1S5	*	INF.	490KΩ	3.7MEG	800KΩ	3.7MEG.	*	
5	3Q4	*	185KΩ	410KΩ	185KΩ	*	185KΩ	*	
6	117N7	INF.	0Ω	185KΩ	410KΩ	185KΩ	74Ω	185Ω	185KΩ

* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

468-9

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is shorted.

1. DC Voltage measurements are at 20,000 ohms per volt: AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

EMERSON
MODELS 507, 509, 511, 518, 522

EMERSON
MODELS 507, 509, 511, 518, 522

EMERSON MODEL 522

TRADE NAME	Emerson Models 507, 509, 511, 518, 522
MANUFACTURER	Emerson Radio & Phono Corp., 111 8th Ave., New York, N.Y.
TYPE SET	AC-DC Superheterodyne - Self Contained Loop Antenna
TUBES (FIVE)	Types, 12BE6 Converter, 12BA6 IF Amp., 12AT6 Det.-AVC-AF, 50B5 Power Output, 35W4 Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1620KC RATING .235 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer horizontal. Use isolation transformer if available. If not, connect capacitor in series with low side of signal generator to B-. Volume control at maximum volume position and output from signal generator no higher than necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to stator of rear section of variable Low side to B-.	455KC	High freq. end of dial. (Variable fully open)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
	Loop	1425KC	1425KC	"	A5,A6.	Connect signal generator to three or four turns of wire wound in a circle 12" in diameter. Place 15 to 20 inches from and parallel to receiver loop. Adjust for maximum output in order given.
	"	600KC	Tune for maximum output.	"	32	Rock dial and adjust loose turn on loop for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: EMERSON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12BE6	12BE6	7CH	
2	IF Amp.	12BA6	12BA6	7BK	
3	Det.-AVC-AF	12AT6	12AT6	7BT	
4	Power Output	50B5	50B5	5BQ	
5	Rectifier	35W4	35W4	7BZ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: EMERSON PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	30	150		2N521	M-50+30-150	EL-25	PRSA150-40-40	BRD3515	Filter - Red
B	50	150							" - Green
7	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	Line Filter
8	.02	400		TP423	S-4-02	TC-12	484-02	DT4S2	50B5 Plate Bypass
9	.02	400		TP423	S-4-02	TC-12	484-02	DT4S2	Audio Coupling
10	.002	600		TP405	S-6-002	TC-22	684-002	DT6D2	" "
11	.1	200		TP428	S-4-1	TC-1	484-.1	DT4P1	AVC Filter
12	.2	200		TP429	S-4-2	TC-2	484-.2	DT4P2	Line Isolation
13	500	500		MC245	M0.5-35	1FM-35	1468-0005	5W5T5	Audio Plate Bypass
14	220	500		MC237	M0.5-32	1FM-32	1468-0002	5W5T2	IF Bypass Vol. Cont.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
15A	500KΩ	1	390000	UM156	D11-133	AM-58-S	Volume Control
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 15A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

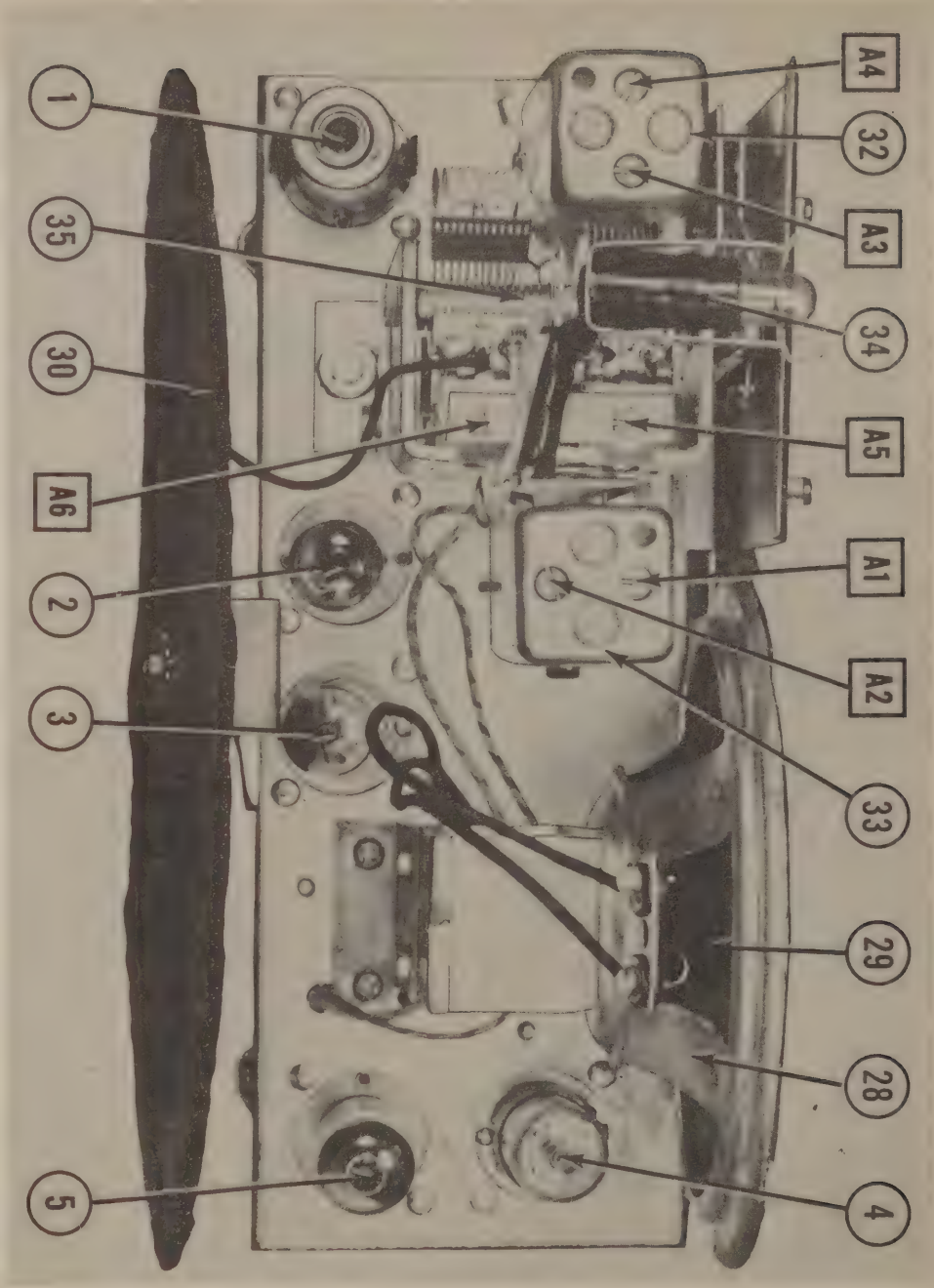
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	IRC PART No.	IDENTIFICATION CODES
16	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
17	220KΩ	½		BTS-220K	Red-Red-Yl. Line Isolating
18	15 Meg.	½		BTS-15 Meg.	Br.-Grn.-Blue AVC Network
19	120Ω	½		BW-½-120	Br.-Red-Br. IF Cathode
20	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
21	15 Meg.	½		BTS-15 Meg.	Br.-Grn.-Blue 1st AF Grid
22	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. 1st AF Plate Load
23	150Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
24	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
25	1000Ω	1		BTA-1000	Br.-Blk.-Red Filter
26	15Ω	1		BT-1-15	Br.-Grn.-Blk. Rectifier Ballast

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: EMERSON PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
27	2010Ω	3.2Ω	224Ω tapped @ 9Ω	.85Ω	734000	A-3876*			*Drill one new mounting hole. Add extra filter to reduce hum level.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA EMERSON PART No.	JENSEN PART No.		INSTALLATION NOTES
28	FIELD PM	VC IMP. 3.2Ω	180000	ST-107 Mod. P5-V		
29	CONE DIA. 4-5/8"	VC DIA. 1/2"	NOT READILY	REPLACEABLE-USE COMPLETE SPEAKER UNIT.		

R F COILS

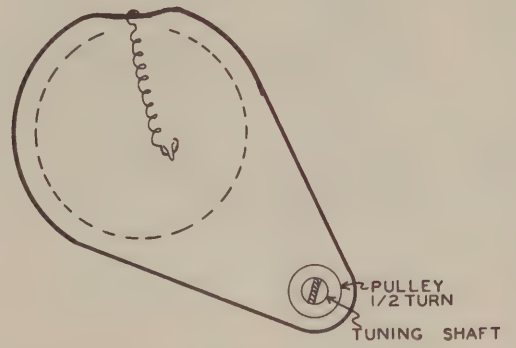
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA EMERSON PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
30	Loop Ant.		2.8Ω	700000		
31	Osc. Coil	.5Ω	5.5Ω	716010	14-1040	Add 50 MMFD cap. from grid to high side of tuning cap.
32	Input IF	28Ω	18Ω	720000	16-6666	
33	Output IF	23Ω	22Ω	720100	16-6667	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA EMERSON PART No.		INSTALLATION NOTES
34	Bayonet	6-8	.15	Brown			Type 47

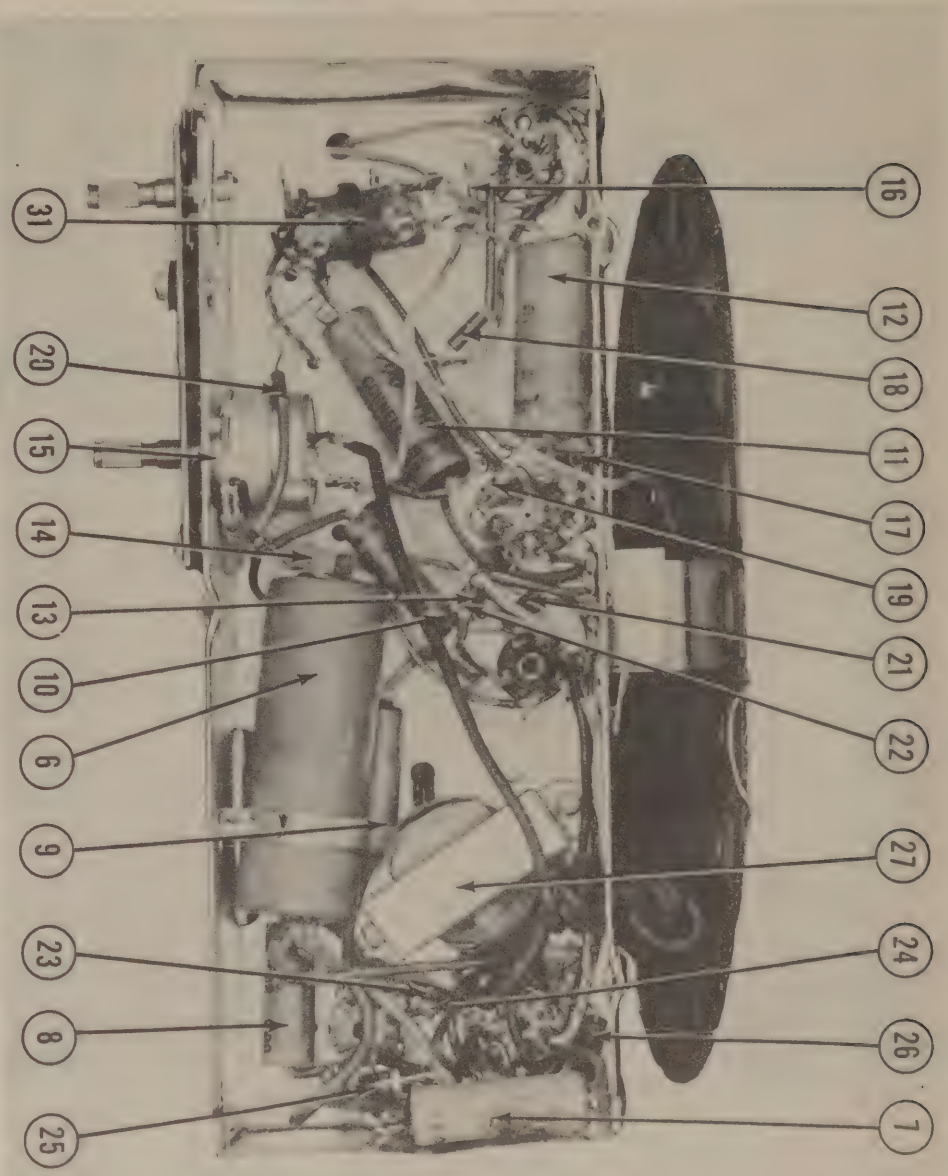
MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
35	Tuning Cap.		2 Gang Variable Cap.

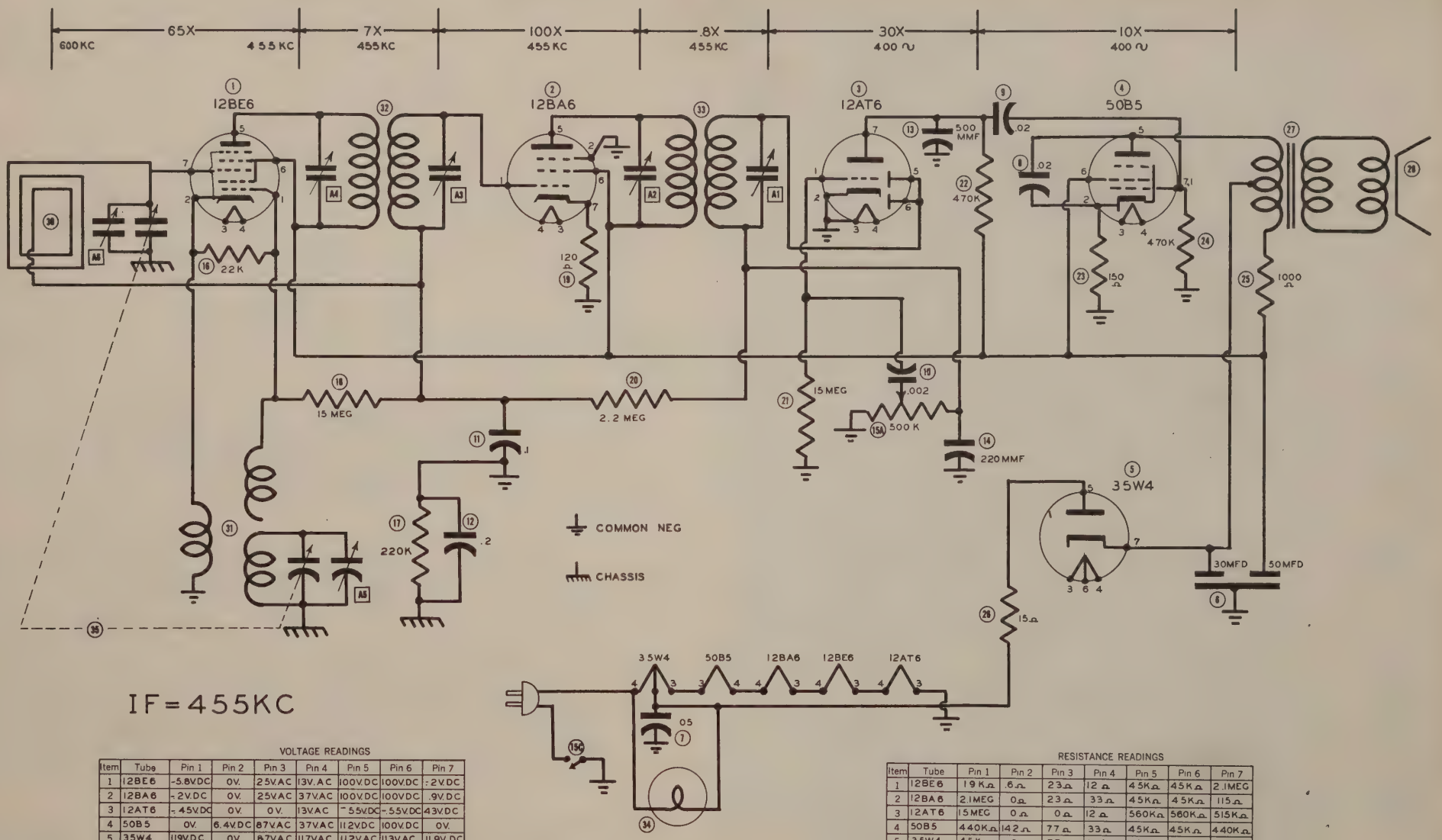


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



EMERSON MODELS
507, 509, 511, 516, 522



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	-5.8VDC	0V.	25VAC	13V.AC	100VDC	100VDC	-2VDC
2	12BA6	-2VDC	0V.	25VAC	37VAC	100VDC	100VDC	.9VDC
3	12AT6	-45VDC	0V.	0V.	13VAC	-55VDC	-55VDC	43VDC
4	50B5	0V.	6.4VDC	87VAC	37VAC	112VDC	100VDC	0V.
5	35W4	119VDC	0V.	87VAC	117VAC	112VAC	113VAC	119VDC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

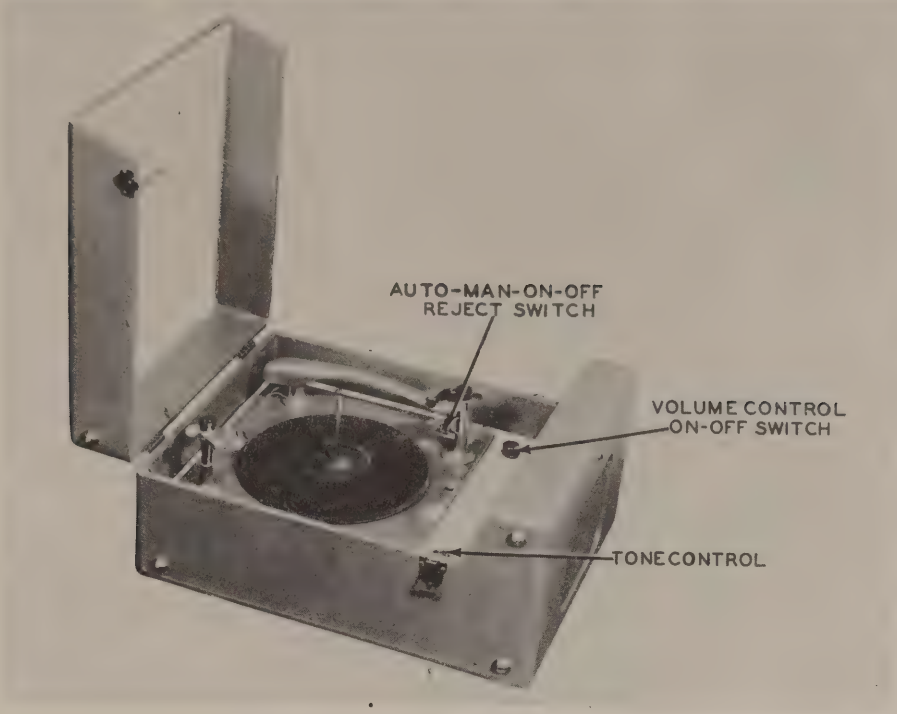
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	19KΩ	.6Ω	23Ω	12Ω	45KΩ	45KΩ	2.1MEG
2	12BA6	2.1MEG	0Ω	23Ω	33Ω	45KΩ	45KΩ	115Ω
3	12AT6	15MEG	0Ω	0Ω	12Ω	560KΩ	560KΩ	515KΩ
4	50B5	440KΩ	142Ω	77Ω	33Ω	45KΩ	45KΩ	440KΩ
5	35W4	45KΩ	0Ω	77Ω	104Ω	115Ω	100Ω	45KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

468-10

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



ESPEY MODEL 641

TRADE NAME	Espey Models 641, 642
MANUFACTURER	Espey Mfg. Co., Inc., 528 E. 72nd St., New York,21, N.Y.
TYPE SET	AC Operated Record Player with 4 Tube Amp. (Model 641 Automatic Phono., Model 642 Manual Phono.)
TUBES (FOUR)	Types, 14B6 Audio Amp. & Phase Inverter, 2-35A5 Power Output, 35Y4 Rectifier.
POWER SUPPLY RATING	105-125 Volts AC .265 Amps. @ 117V AC

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14B6	13.5V.AC	90V.DC	0V.	15V.DC	0V.	0V.	15V.DC	0V.
2	35A5	48V.AC	108V.DC	108V.DC	0V.	0V.	0V.	7.2V.DC	13.5V.AC
3	35A5	87V.AC	109V.DC	108V.DC	0V.	0V.	0V.	7.2V.DC	48V.AC
4	35Y4	117V.AC	113V.AC	0V.	113V.AC	0V.	0V.	113V.DC	87V.AC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14B6	12Ω	287 KΩ	5MEG.	113 KΩ	INF.	INF.	113KΩ	0Ω
2	35A5	41Ω	140KΩ	140KΩ	INF.	0Ω	430KΩ	92Ω	12Ω
3	35A5	72Ω	140 KΩ	140KΩ	0Ω	0Ω	410 KΩ	92Ω	41Ω
4	35Y4	100Ω	97Ω	INF.	97Ω	INF.	0Ω	140KΩ	72Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: ESPEY PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	AF & Phase Inv.	14B6	14B6	8W	
2	Power Output	35A5	35A5	6AA	
3	Power Output	35A5	35A5	6AA	
4	Rectifier	35Y4	35Y4	5AL	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ESPEY PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
5A	40	150	A25.019	2N511	M-2x40-150	TA-440	PRSA150-40-40	BRL4415	Filter - Red
B	40	150							" "
6	.05	600		TP426	S-6-05	TC-15	684-05	DT6S5	Line Isolation
7	.005	600		TP408	S-6-005	TC-25	684-005	DT6D5	35A5 Plate Bypass
8	.02	200		TP423	S-4-02	TC-12	484-02	DT4S2	Audio Coupling
9	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Tone Compensation
10	.02	200		TP423	S-4-02	TC-12	484-02	DT4S2	Audio Coupling
11	.25	200		TP430	S-4-25	TC-25	484-.25	DT4P25	Audio Plate Decoup.
12	.25	200		TP430	S-4-25	TC-25	484-.25	DT4P25	Audio Cath. Bypass
13	100	500		MC235	M0.5-31	1FM-31	1468-0001	5W5T1	Phono. Coupling

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ESPEY PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
14A	500KΩ	1	A-9.067	MR48	D13-133	M-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 14A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
15A	500KΩ	1		MR48	D13-133	M-60-Z	Tone Control-Late production
B	Shaft			Not Req.	A	Not Req.	Attach to 15A per instructions
15A	1 Meg.	1	A-9.068	MR53	D13-137	M-63-Z	Tone Control-Early production
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 15A per instructions

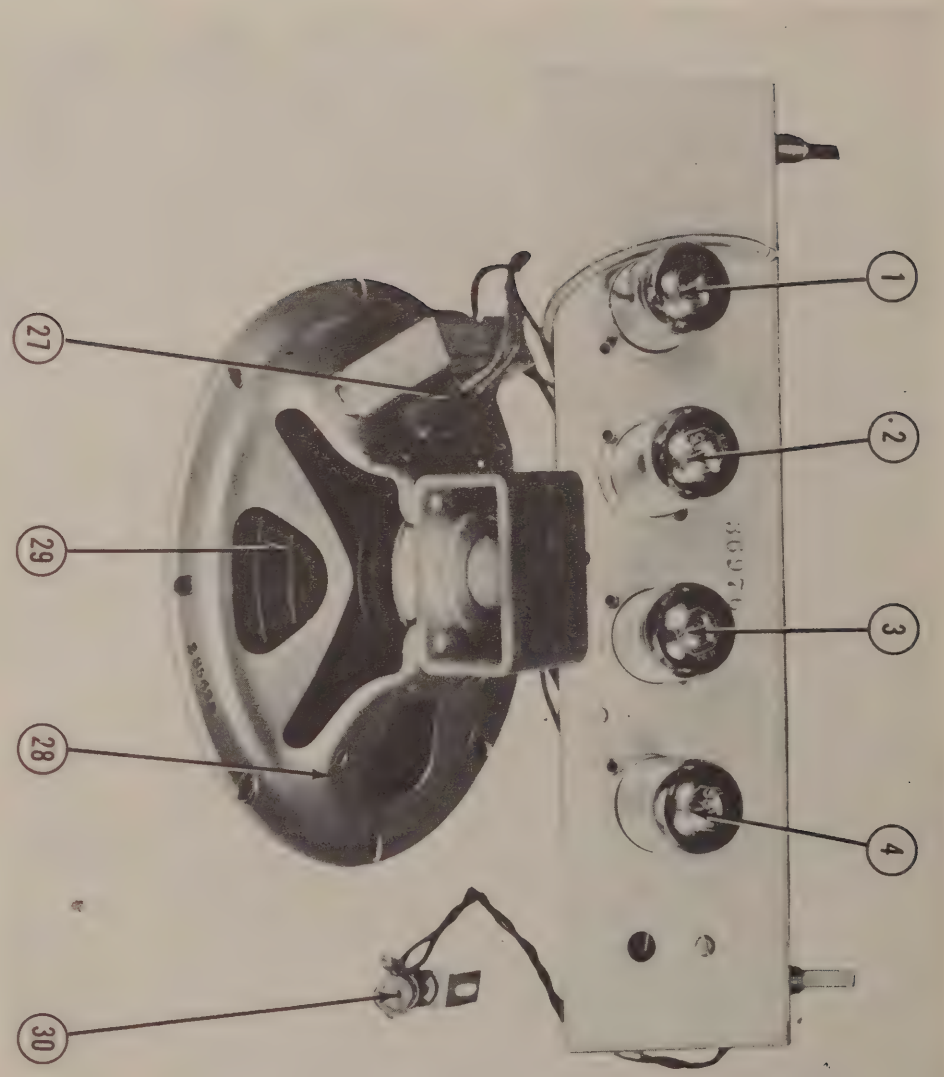
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ESPEY PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
16	100Ω	1		BT-1-100	Br.-Blk.-Br. Pilot Light Shunt
17	2.2 Meg.	¼		BTS-2.2 Meg.	Red-Red-Grn. Series Phono
18	4700Ω	¼		BTS-4700	Yl.-Vi.-Red Phase Inverter Cathode
19	100KΩ	¼		BTS-100K	Br.-Blk.-Yl. Plate Load
20	100KΩ	¼		BTS-100K	Br.-Blk.-Yl. Phase Inverter Cathode
21	47KΩ	¼		BTS-47K	Yl.-Vi.-Or. Phase Inverter Plate Decoupling
22	470KΩ	¼		BTS-470K	Yl.-Vi.-Yl. Output Grid
23	470KΩ	¼		BTS-470K	Yl.-Vi.-Yl. Output Grid
24	100Ω	1		BT-1-100	Br.-Blk.-Br. Output Cathode
25	1000Ω	1		BT-1-1000	Br.-Blk.-Red Filter
26	220KΩ	¼		BTS-220K	Red-Red-Yl. Line Isolation

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: ESPEY PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.		INSTALLATION NOTES
27A	2000Ω CT	3.3Ω	280Ω CT	.35Ω	Part of C-11.039	A-3861‡	T-22847		‡Universal transformer- Use tap which will give best impedance matching.
B					Part of C-11.038				Alternate transformer

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			ESPEY PART No.	JENSEN PART No.		
28A	FIELD	VC IMP.	C-11.039	ST-109		
B	PM	3.3Ω	C-11.038	Mod. P6-W		Alternate Speaker
29	CONE DIA.	VC DIA.	NOT READILY	REPLACEABLE	-USE COMPLE	TE SPEAKER UNIT
	6"	½"				

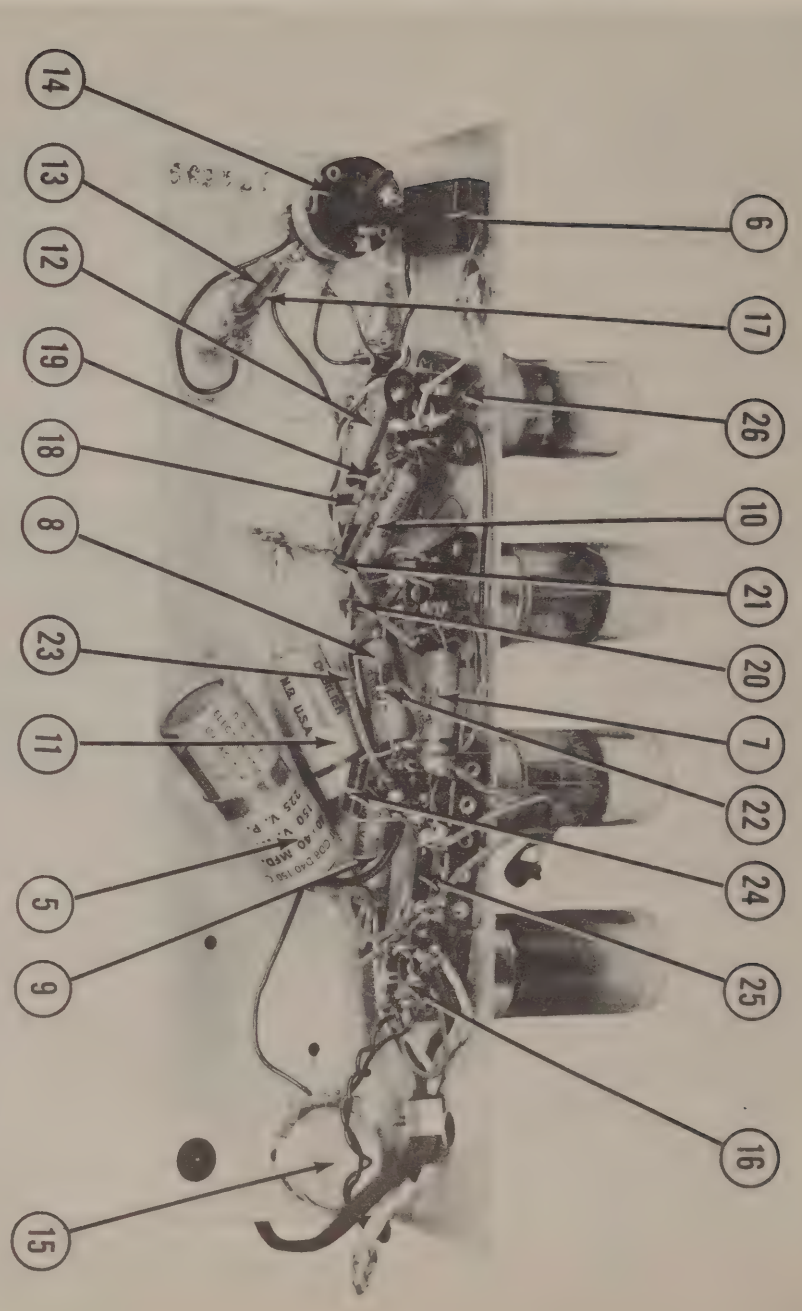
DIAL LIGHT

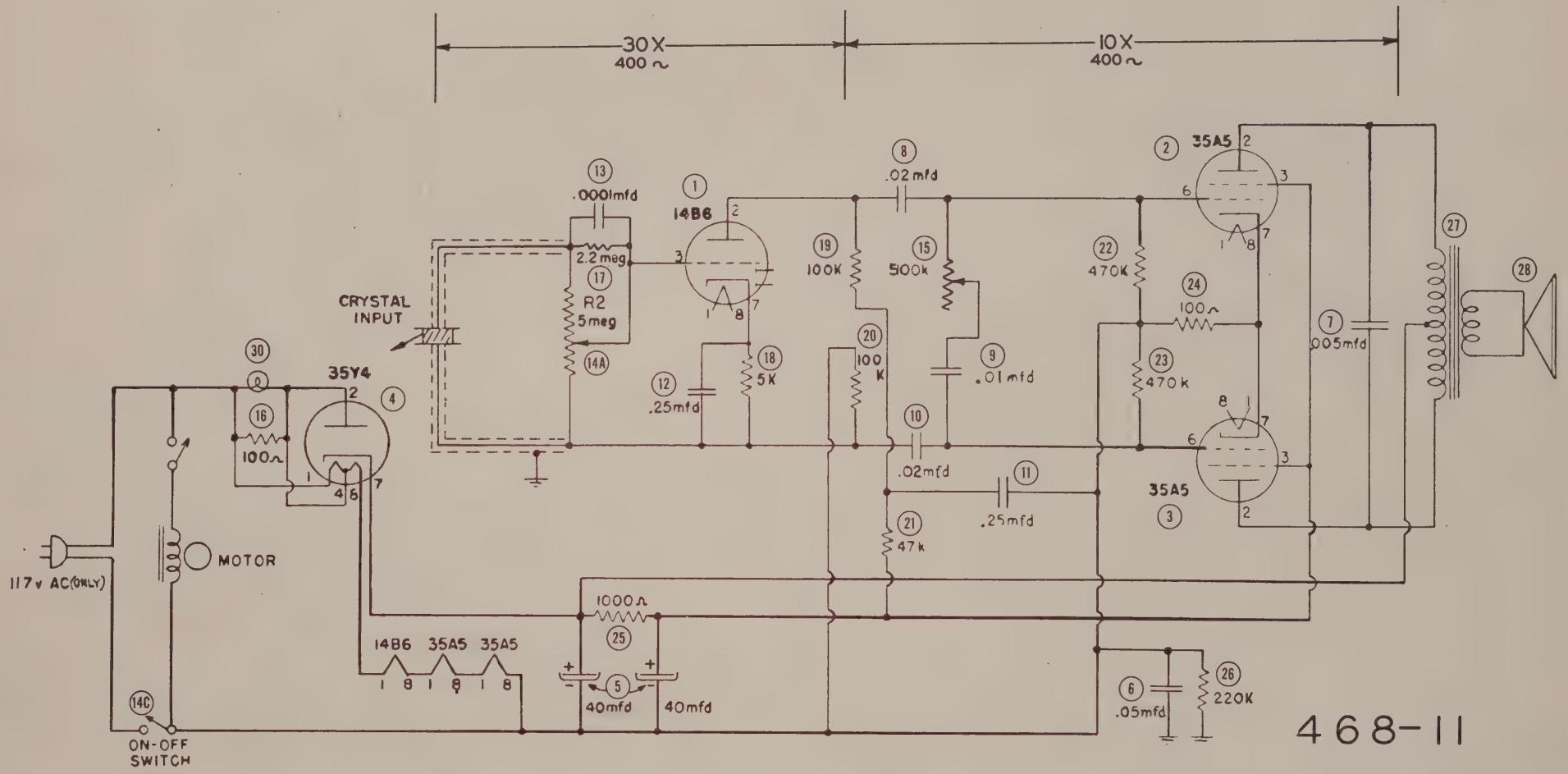
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					ESPEY PART No.		
30	Bayonet	6-8	0.15	Brown			Type 47

DISASSEMBLY INSTRUCTIONS

1. Remove the push-on type volume and tone control knobs and felt washers.
2. Remove four wood screws and washers from speaker grill. Remove grill.
3. Remove seven wood screws and washers from turntable board.
4. Remove lock-nut from volume control.
5. Remove bolt, washers, and nut, holding chassis to turntable board.
6. Remove two nuts and lock washers from bolts holding speaker to cabinet. Remove speaker.
7. Remove wood screw and washer from pilot light bracket.
8. Remove changer, chassis, speaker and pilot light assembly from cabinet.
9. Loosen the wood screws on line cord brackets. Remove line cord from underside of turntable board.
10. Remove two screws and washers holding cap on "off-on" phono switch.
11. Unsolder the two blue and white leads from phono on-off switch.
12. Unsolder brown and blue phono-pickup leads.

CHASSIS—BOTTOM VIEW





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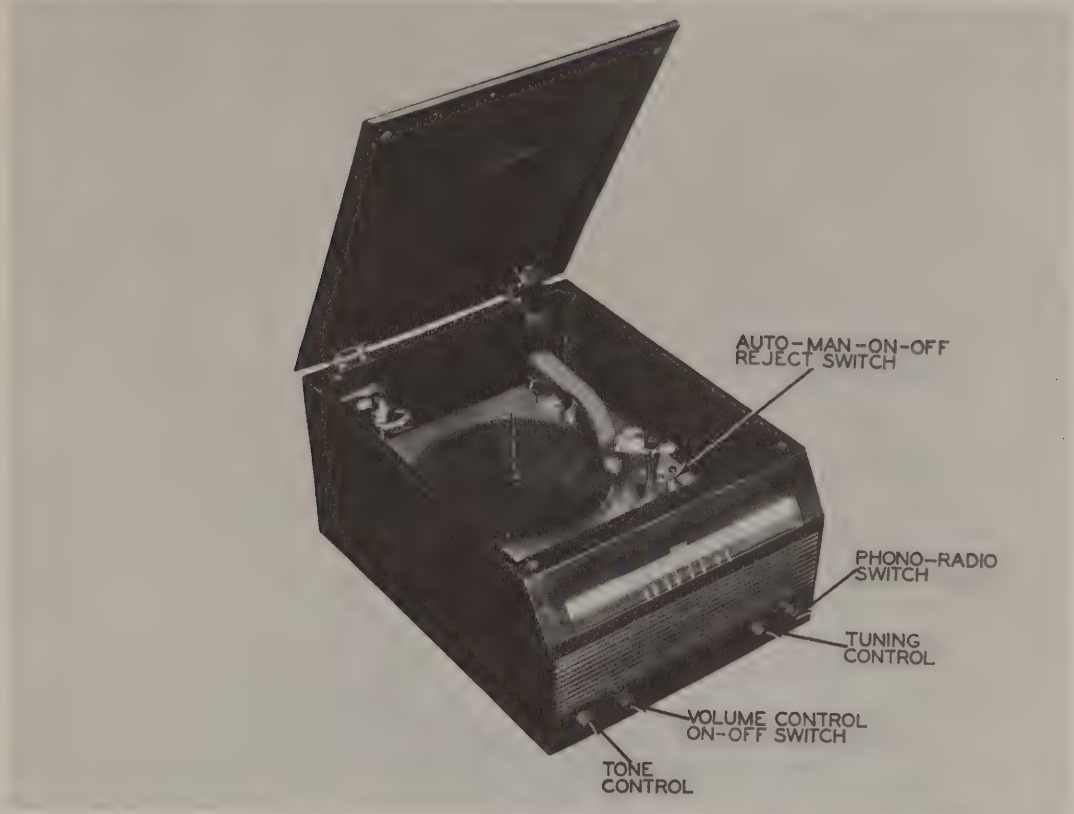
The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made [illegible]erative and 3-volt battery bias substituted for measurement.

PHOTOFACT* Folder

*TRADE MARK

ESPEY
MODELS 6540, 6541, 6547

ESPEY
MODELS 6540, 6541, 6547



ESPEY MODEL 6547

TRADE NAME	Espey Models 6540, 6541, 6547
MANUFACTURER	Espey Mfg. Co., Inc. 528 E. 72nd St., New York 21, N.Y.
TYPE SET	AC Operated Combination Automatic Phono. - Superheterodyne Receiver, Self Contained Loop Antenna
TUBES (FIVE)	Types, 14Q7 Converter, 14A7 IF Amp., 14B6 Det.-AVC-AF, 50A5 Power Output, 35Y4 Rectifier.
POWER SUPPLY	105-125 Volts AC
TUNING RANGE—BROADCAST	540-1700KC RATING .240 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

Use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.01 MFD.	High side to stator of rear section of variable. Low side to B-.	455KC	Quiet point at high freq. end of dial.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
100 MMF.	High side to ant. lead. Low side to chassis.	1720KC	High freq. end (Fully clockwise)	"	A5	" " " "
100 MMF.	"	1500KC	Tune for maximum output.	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: ESPEY PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	14Q7	14Q7	8AL	
2	IF Amp.	14A7	14A7	8V	
3	Det.-AVC-AF	14B6	14B6	8W	
4	Power Output	50A5	50A5	6AA	
5	Rectifier	35Y4	35Y4	5AL	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ESPEY PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150	A25.019	2N511	M-2x40-150	TA-440	PRSA150-40-40	BRL4415	Filter
B	40	150							"
7	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	Line Filter
8	.02	400		TP423	S-4-02	TC-12	484-02	DT4S2	50A5 Plate Bypass
9	.02	400		TP423	S-4-02	TC-12	484-02	DT4S2	Audio Coupling
10	.005	600		TP408	S-6-005	TC-25	684-005	DT6D5	" "
11	.005	600		TP408	S-6-005	TC-25	684-005	DT6D5	AVC Filter
12	.25	200		TP430	S-4-25	TC-2	484-.25	DT4P25	Line Isolation
13	.002	200		TP405	S-6-002	TC-22	484-002	DT6D2	Ant. Coupling
14	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	Tone Compensation
15	250	500		MC240	M0.5-325	1FM-325	1468-00025	5W5T25	Audio Plate Bypass
16	250	500		MC240	M0.5-325	1FM-325	1468-00025	5W5T25	IF Bypass Vol. Cont.
17	50	500		MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Phono. Coupling

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ESPEY PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
18A	500KΩ	1	A-9.066	MR48	D13-133	M-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 18A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
19A	100KΩ	1	A-9.068	MR39	D13-128	M-51-Z	Tone Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 19A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ESPEY PART No.	IRC PART No.	IDENTIFICATION CODES
20	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
21	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue AVC Network
22	3.3 Meg.	½		BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
23	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
24	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. 1st AF Plate Load
25	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
26	150Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
27	220KΩ	½		BTS-220K	Red-Red-Yl. Line Isolation
28	1000Ω	2		BT-2-1000	Br.-Blk.-Red Filter
29	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. Series Phono.

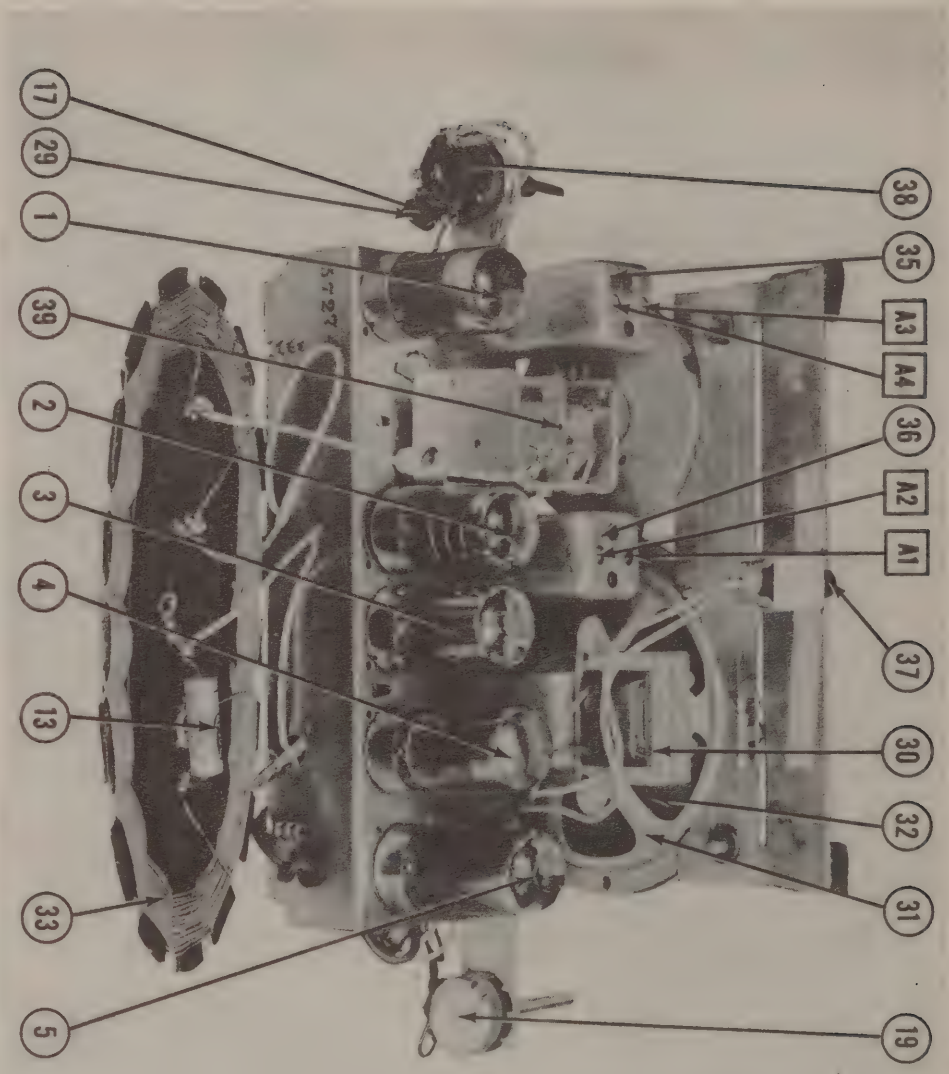
TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: ESPEY PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
30	1700Ω	3.3Ω	155Ω	.5Ω	Part of B-11.037	A-3876	T-22S45		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: ESPEY PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-105		
31	PM	3.3Ω	B-11.037	Mod. P5-X		
	CONE DIA.	VC DIA.				
32	4-5/8"	9/16"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA ESPEY PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
33	Loop Ant.	0Ω	1.3Ω	B5.006		
34	Osc. Coil	.8Ω	6.2Ω	B2.192	14-1040*	*Add 50 MMFD. cap. from grid to high side tuning cap.
35	Input IF	21.5Ω	21Ω	C2.191-1	16-6666	
36	Output IF	14.2Ω	14.5Ω	C2.191-2	16-6667	

DIAL LIGHT

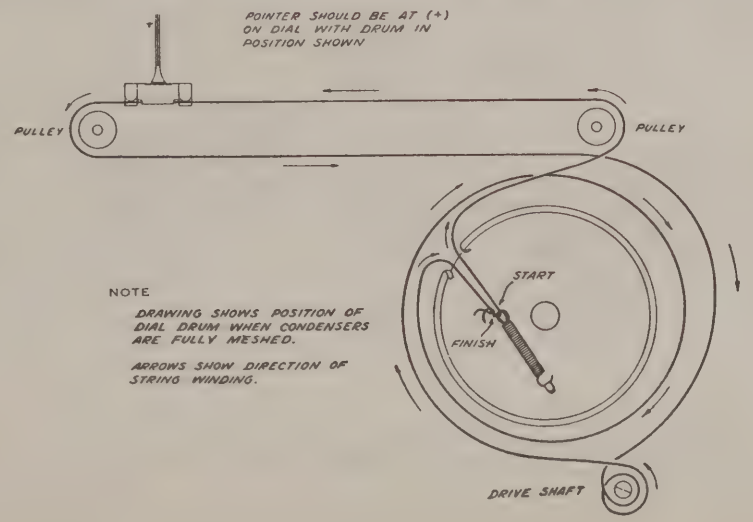
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA ESPEY PART No.		INSTALLATION NOTES
37	Bayonet	6-8	0.15	Brown			Type 47

MISCELLANEOUS

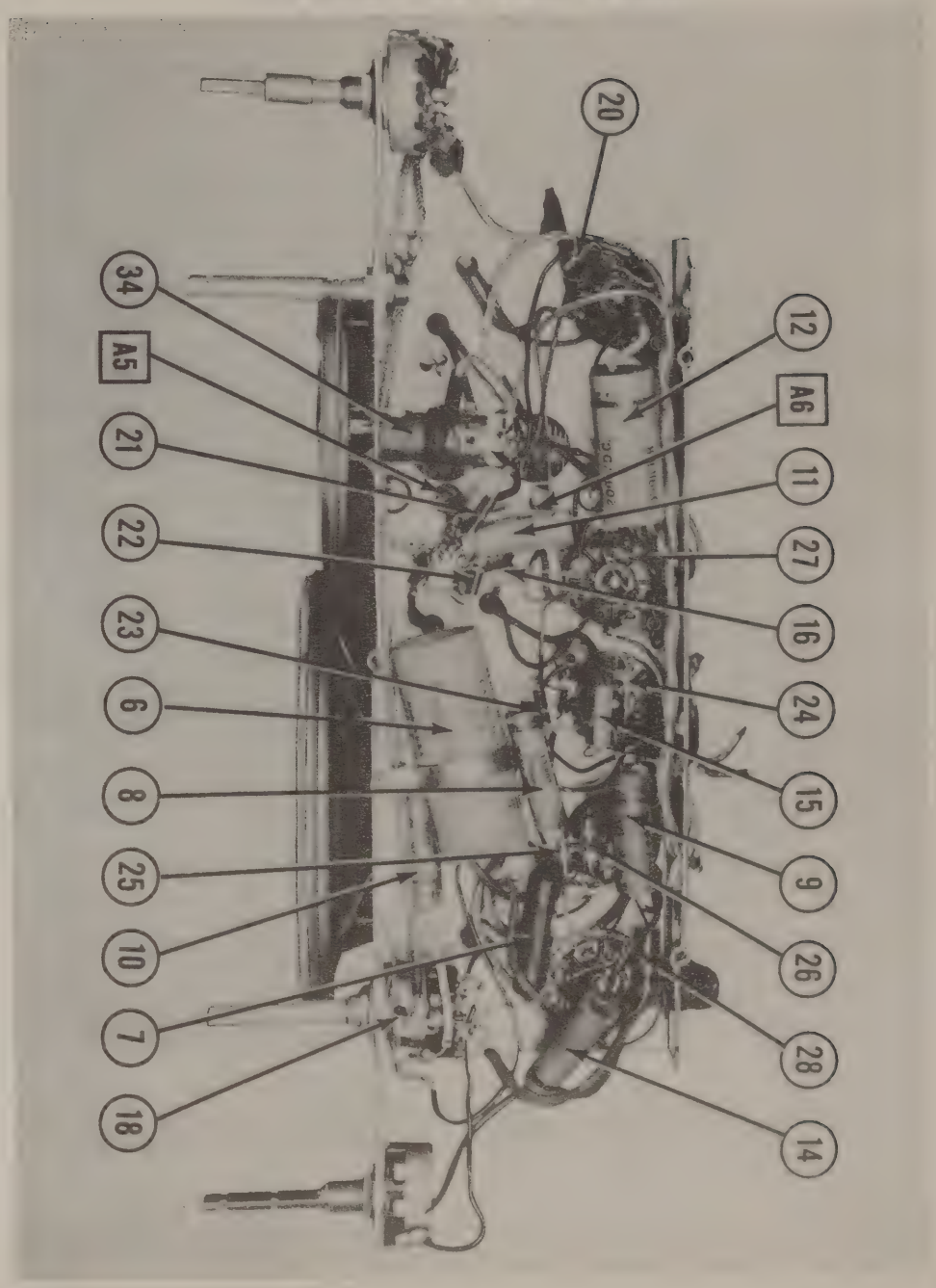
ITEM No.	PART NAME	ESPEY PART No.	NOTES
38	Switch		
39	Tuning Cap.		2 Gang Variable Cap.

DISASSEMBLY INSTRUCTIONS

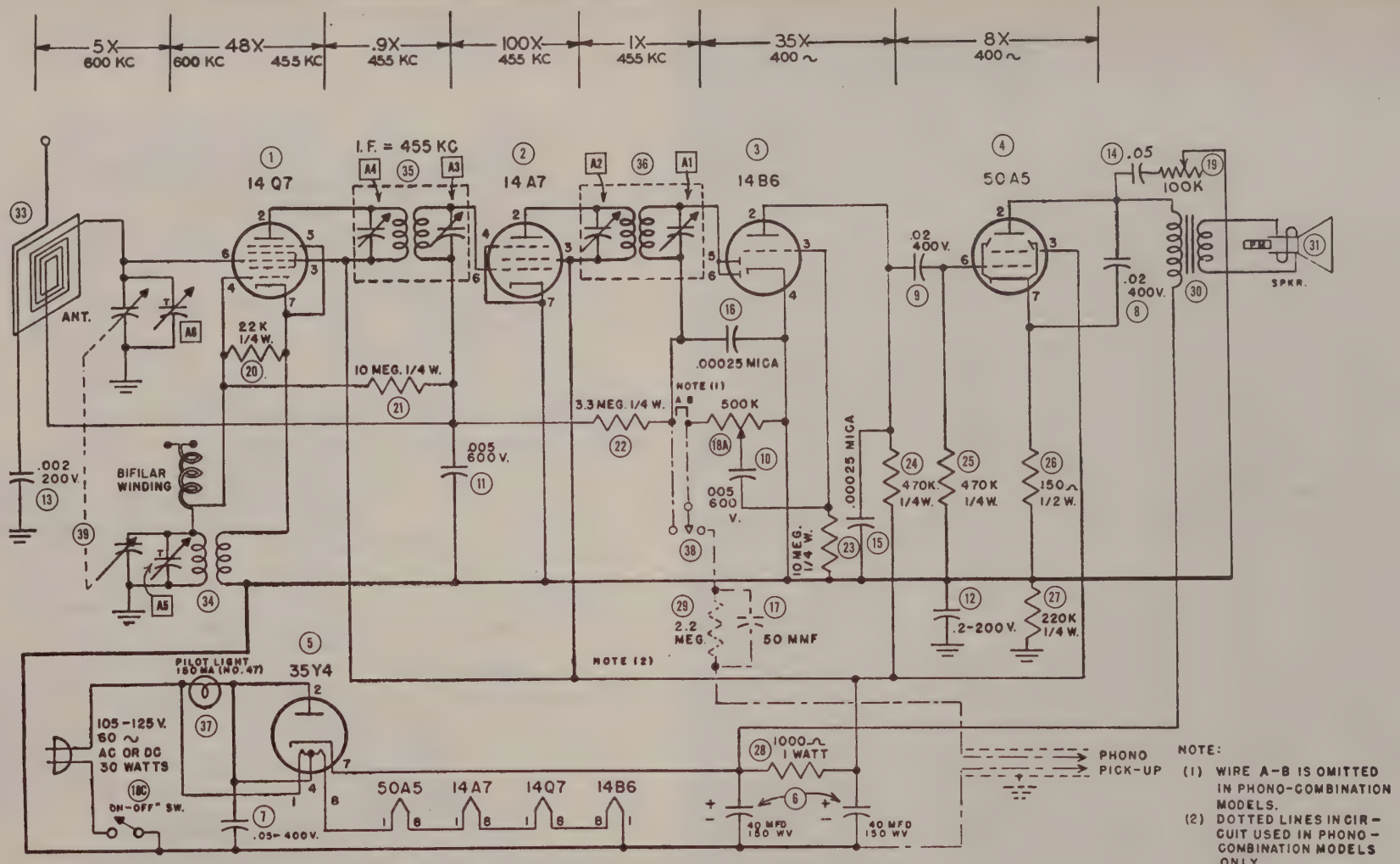
1. Remove the four push-on type control knobs and felt washers.
2. Remove five wood screws and washers holding inside panel board of cabinet.
3. Remove two wood screws holding loop antenna to panel board. Remove panel board from cabinet.
4. Remove record changer mounting bolts.
5. Remove four wood screws and washers from front changer mounting board. Slide board out from under changer and remove from cabinet.
6. Remove machine screws and washers holding chassis to chassis board.
7. Lift changer, radio chassis and loop antenna from cabinet.
8. Unsolder pickup leads from terminal strip.
9. Remove two machine screws holding phono-motor switch cap. Remove cap.
10. Unsolder the two blue and white leads from the phono-motor switch.


POINTER SHOULD BE AT (+) ON DIAL WITH DRUM IN POSITION SHOWN
PULLEY
PULLEY
START
FINISH
DRIVE SHAFT
NOTE
DRAWING SHOWS POSITION OF DIAL DRUM WHEN CONDENSERS ARE FULLY MESHED.
ARROWS SHOW DIRECTION OF STRING WINDING.

CHASSIS—BOTTOM VIEW



ESPEY MODELS 6540, 6541, 6547



NOTE:
(1) WIRE A-B IS OMITTED IN PHONO-COMBINATION MODELS.
(2) DOTTED LINES IN CIRCUIT USED IN PHONO-COMBINATION MODELS ONLY.

NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN RADIO POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14Q7	25V.AC	100V.DC	100V.DC	-6.5V.DC	0V.	-4V.DC	0V.	13V.AC
2	14A7	37V.AC	100V.DC	100V.DC	0V.	0V.	-4V.DC	0V.	25V.AC
3	14B6	0V.	62V.DC	-55V.DC	0V.	-55V.DC	-55V.DC	0V.	13V.AC
4	50A5	87V.AC	112V.DC	100V.DC	0V.	0V.	0V.	6.3V.DC	37V.AC
5	35Y4	117V.AC	113V.AC	0V.	113V.AC	0V.	0V.	118V.DC	87V.AC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14Q7	22Ω	100KΩ	100KΩ	20KΩ	.5Ω	2.3MEG.	.5Ω	12Ω
2	14A7	33Ω	100KΩ	100KΩ	0Ω	205KΩ	2.3MEG.	0Ω	22Ω
3	14B6	0Ω	570KΩ	10MEG.	0Ω	540KΩ	540KΩ	0Ω	12Ω
4	50A5	75Ω	100KΩ	100KΩ	0Ω	0Ω	490KΩ	135Ω	33Ω
5	35Y4	100Ω	97Ω	INF.	97Ω	INF.	INF.	100KΩ	75Ω

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

468-12

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

FEDERAL
MODEL 1030T, 1540T

FEDERAL
MODEL 1030T, 1540T

FEDERAL MODEL 1030T

TRADE NAME	Federal Model 1030T, 1540T
MANUFACTURER	Federal Telephone & Radio Corp., 591 Broad St., Newark, N.J.
TYPE SET	AC - DC 2 Band Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types, 6SS7 RF Amp., 6SA7 Converter, 6SS7 IF Amp., 6SQ7 Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
RATING	.250 Amps. @ 117V AC
TUNING RANGE—BROADCAST	550-1600KC
SHORT WAVE	5.6-15.5MC

ALIGNMENT INSTRUCTIONS

Use isolation transformer if available. Volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to ext. ant. lead. Low side thru a .1 MFD. condenser to chassis.	455KC	BC	High freq. end (Variable fully open)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation trans. is not used reduce dummy ant. to .001 MFD. to reduce excessive hum modulation.
.1 MFD.	"	"	"	"	"	A5	Adjust for minimum output.
200 MMF.	"	1600KC	"	"	"	A6	Adjust for maximum output.
200 MMF.	"	1400KC	"	Tune for maximum output.	"	A7	" " " "
400 ohms	"	6.0 MC	SW	Tune for maximum output.	"	A8	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: FEDERAL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SS7	6SS7	8N	
2	Converter	6SA7	6SA7	8R	
3	IF Amp.	6SS7	6SS7	8N	
4	Det.-AVC-AF	6SQ7	6SQ7	8Q	
5	Power Output	50L6GT	50L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: FEDERAL PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150		FP214	DY-2x40-150	EL-25	AF88D	UP6BJ34	■ Filter
B	40	150							▲ "
8	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	Line Filter
9	.2	400		TP429	S-4-2	TC-2	484-.2	DT4P2	Line Isolating
10	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	50L6 Plate Bypass
11	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
12	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	" "
13	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
14	.002	600		TP405	S-6-002	TC-22	684-002	DT6D2	Ant. Coupling
15	.1	400		TP428	S-4-1	TC-1	484-.1	DT4P1	RF Cath. Bypass
16A	470	500		MC245	MO.5-35	1FM-35	1468-0005	5W5T5	Audio Plate Bypass
B	.0015	400		TP404	S-6-001	TC-21	484-001	DT6D1	" " " *
17	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	IF Bypass Vol. Cont.
18	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Osc. Grid Capacitor
19	470	500		MC245	MO.5-35	1FM-35	1468-0005	5W5T5	RF Coupling
20	3000	300		MC461	MW.5-23	1FM-23	1467-003	1W5D3	IF Filter Fixed Tuned

*Used in some models

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: FEDERAL PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
21A	500KΩ	1	FBE1035-1E	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KCS-3	Attach to 21A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

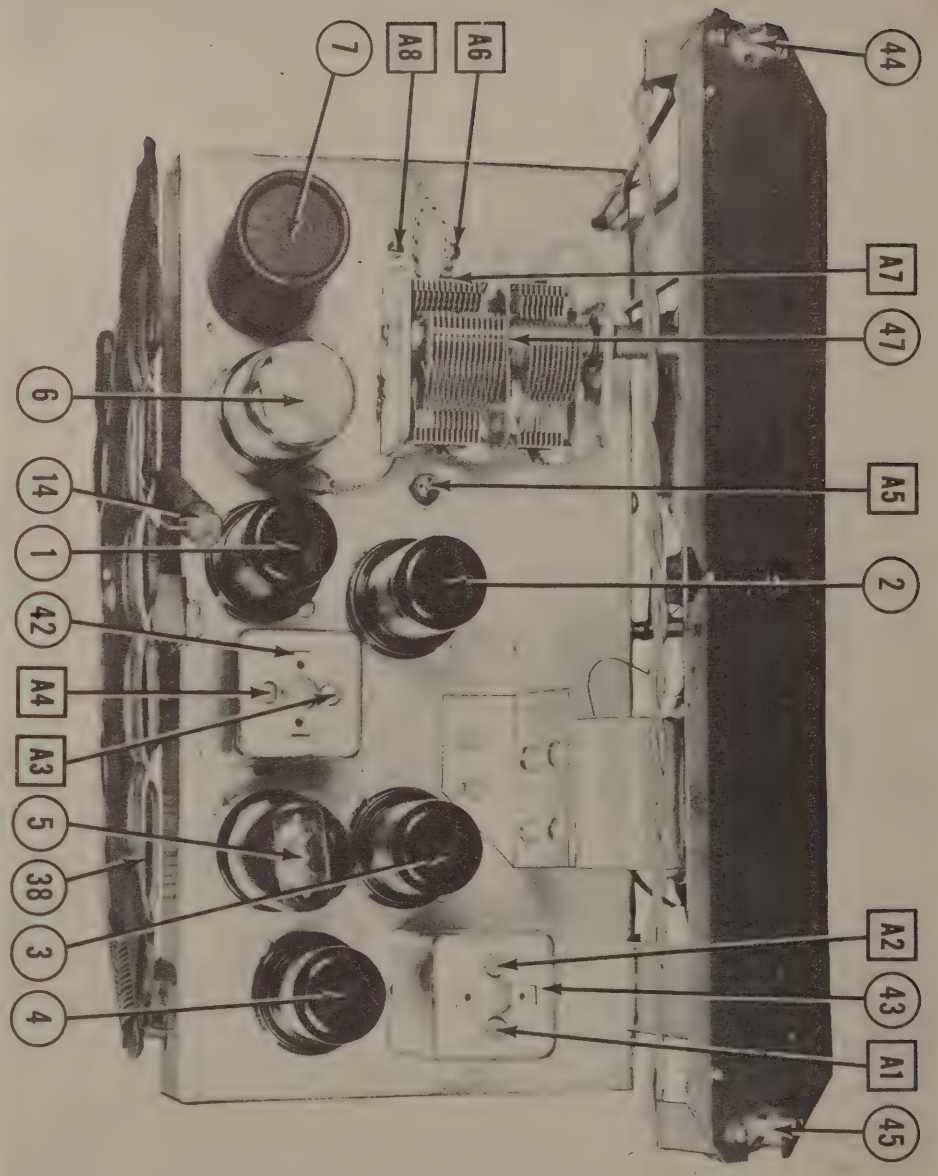
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: FEDERAL PART No.	IRC *PART No.	IDENTIFICATION CODES
22	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
23	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
24	220Ω	½		BW-½-220	Red-Red-Br. IF Cathode
25	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
26	220KΩ	½		BTS-220K	Red-Red-Yl. 1st AF Plate Load
27	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
28	120Ω	½		BW-½-120	Br.-Red-Br. Output Cathode
29	270Ω	½		BW-½-270	Red-Vi.-Br. Pilot Light Shunt
30	1500Ω	1		BTA-1500	Br.-Grn.-Red Filter
31	220KΩ	½		BTS-220K	Red-Red-Yl. Line Isolating
32	470Ω	½		BTS-470	Yl.-Vi.-Br. RF Cathode
33	4700Ω	½		BTS-4700	Yl.-Vi.-Red RF Plate Load
34	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Mixer Grid

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: FEDERAL PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
35	2800Ω	3.3Ω	175Ω tapped @ 17Ω	.56Ω	FBE-1034-1	A-3876‡			‡Add additional filtering to reduce hum level.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA FEDERAL PART No.	REPLACEMENT DATA JENSEN PART No.	INSTALLATION NOTES
	FIELD	VC IMP.		ST-106†	
36	PM	3.3Ω	6474	Mod. P5-W	†Fabricate new mounting bracket.
	CONE DIA.	VC DIA.			
37	4-5/8"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT		

R F COILS

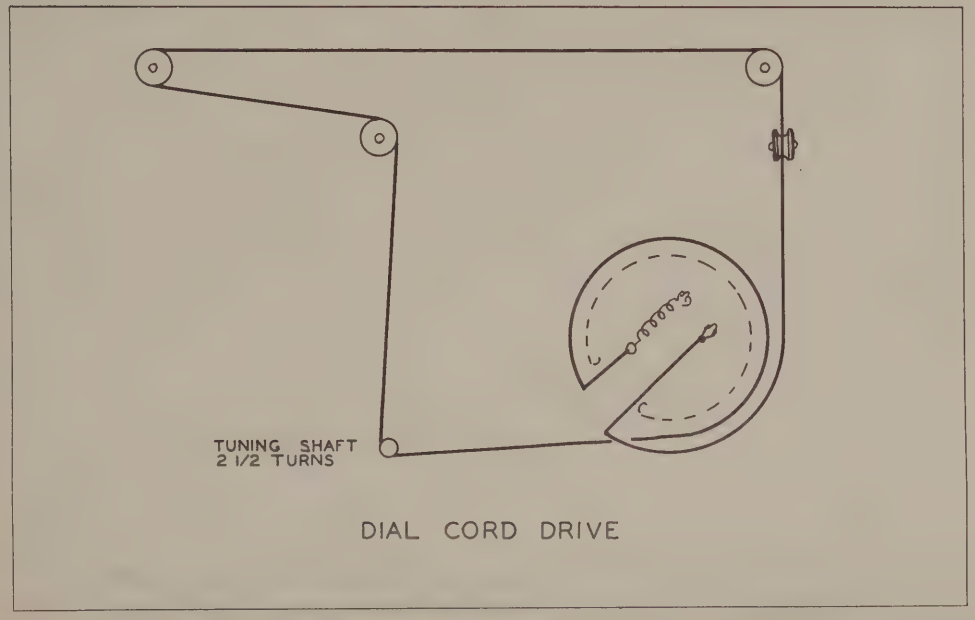
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA FEDERAL PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
38	Loop Ant.	0Ω	1.5Ω			
39	SW Ant. Coil	.3Ω	.2Ω		14-1044	
40	IF Filter	.8Ω				
41A	BC Osc. Coil	.5Ω	7Ω			Items 41A, 41B on same form
41B	SW Osc. Coil	.2Ω	.2Ω			
42	Input IF	24Ω	25Ω		16-6658	
43	Output IF	23Ω			16-6670	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA FEDERAL PART No.		INSTALLATION NOTES
44	Bayonet	3.2	.16	White			Type 1490
45	"	3.2	.16	"			" 1490

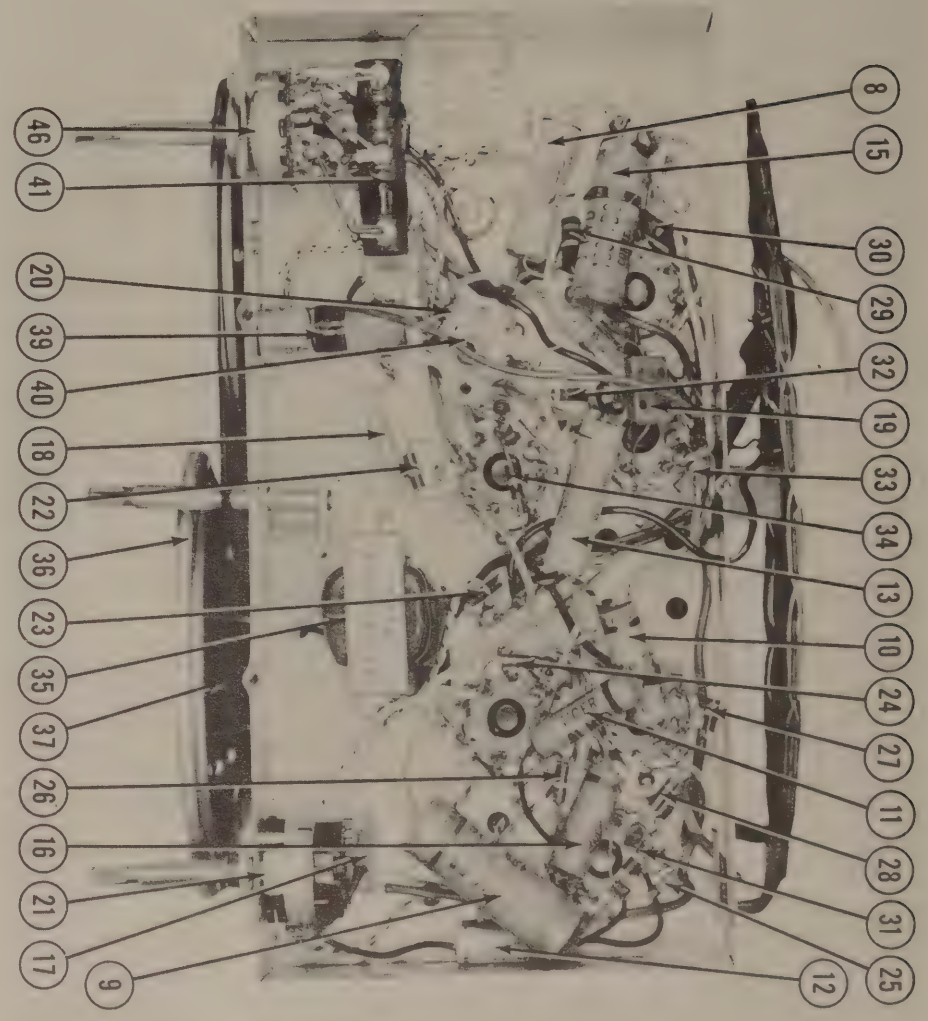
MISCELLANEOUS

ITEM No.	PART NAME	FEDERAL PART No.	NOTES
46	Switch		Band Change
47	Tuning Cap.		2 Gang Variable Cap.

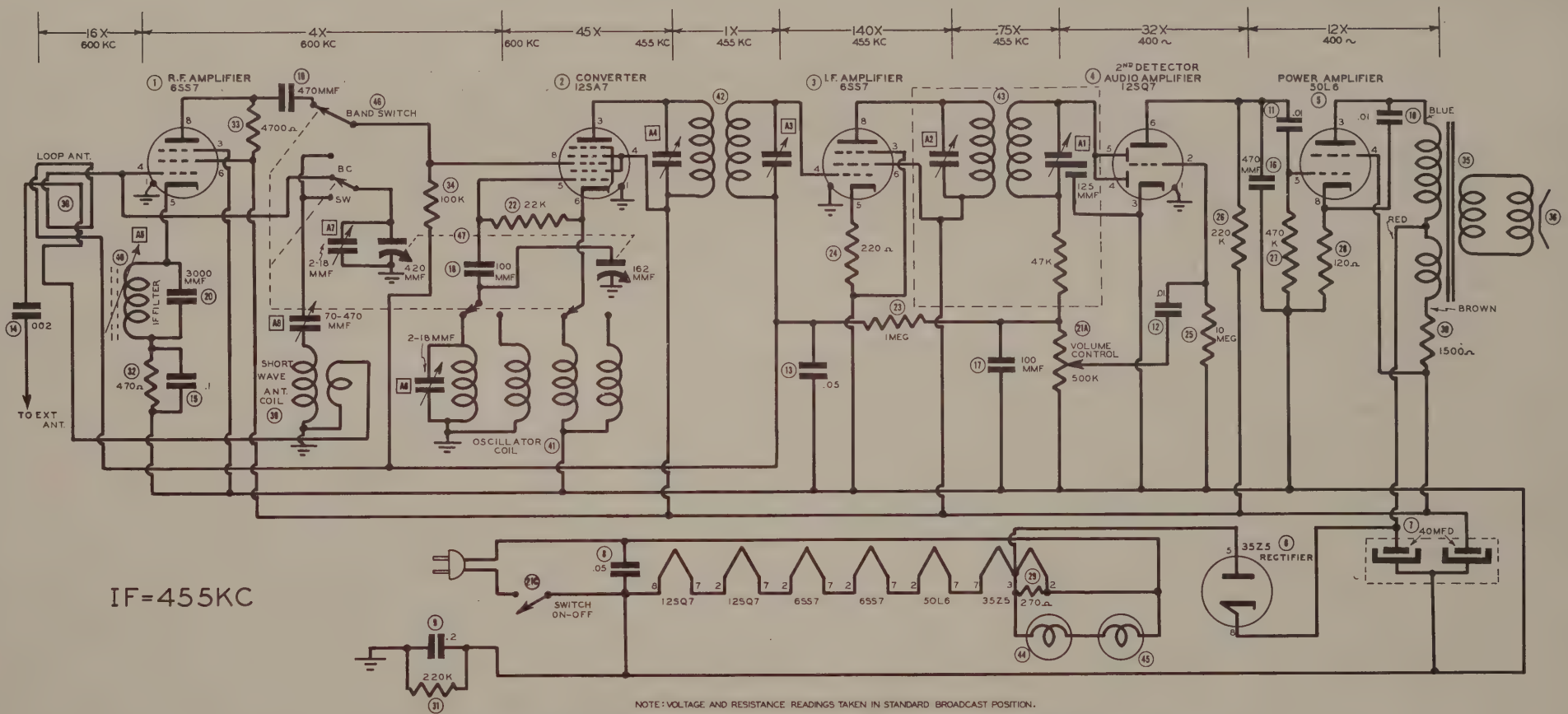


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



FEDERAL MODELS
1030T, 1540T



NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN STANDARD BROADCAST POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SS7	0V.	24.5V.AC	0V.	-4V.DC	2.8V.DC	83V.DC	30V.AC	60V.DC
2	12SA7	0V.	12.5V.AC	83V.DC	83V.DC	-4V.DC	0V.	24.5V.AC	-4V.DC
3	6SS7	0V.	30V.AC	0V.	-4V.DC	1.8V.DC	83V.DC	36V.AC	83V.DC
4	12SQ7	0V.	-45V.DC	0V.	-3V.DC	-3V.DC	58V.DC	12.5V.AC	0V.
5	50L6GT	0V.	36V.AC	117V.DC	83V.DC	0V.	0V.	87V.AC	5.2V.DC
6	35Z5GT	-4V.DC	117V.AC	113V.AC	83V.DC	113V.AC	122V.DC	87V.AC	122V.DC

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RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SS7	185Kn	23n	0n	1.3MEG.	370n	90Kn	28n	95Kn
2	12SA7	185Kn	12n	90Kn	90Kn	22Kn	5n	23n	1.4MEG.
3	6SS7	185Kn	28n	0n	1.3MEG.	210n	90Kn	34n	90Kn
4	12SQ7	185Kn	10MEG.	0n	470Kn	470Kn	310Kn	12n	0n
5	50L6GT	INF.	34n	90Kn	90Kn	390Kn	0n	77n	120n
6	35Z5GT	1.3MEG.	103n	100n	90Kn	100n	90Kn	77n	90Kn

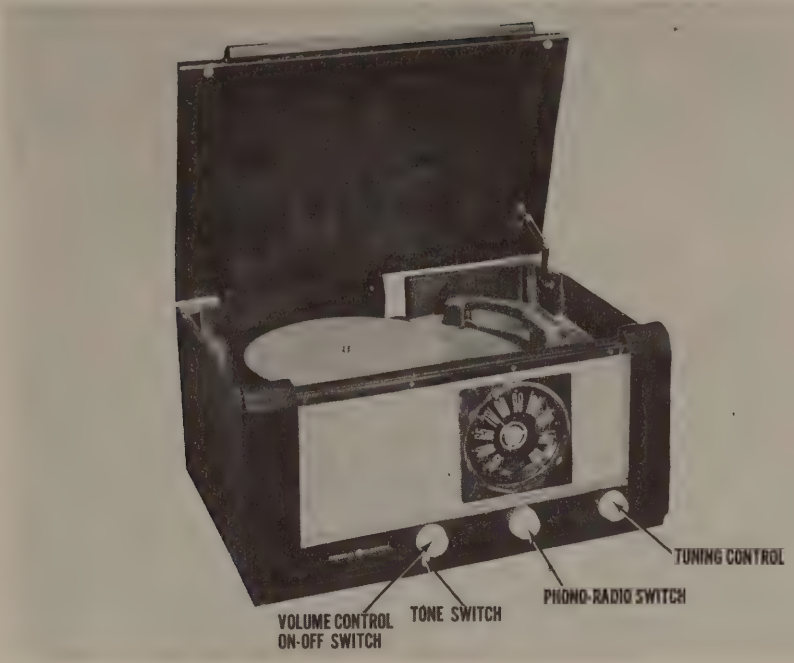
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

468-13

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

GENERAL ELECTRIC
MODEL 106



GENERAL ELECTRIC MODEL 106

TRADE NAME	General Electric Model 106
MANUFACTURER	General Electric Co., Electronics Dept., Bridgeport, Conn.
TYPE SET	AC Operated Combination Phono.-Superheterodyne Receiver, Self Contained Loop Ant.
TUBES (FIVE)	Types, 12SA7 Converter, 12SG7 IF Amp., 12SQ7 Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	105-125 Volts AC
TUNING RANGE—BROADCAST	540-1600KC RATING .325 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

To check pointer, turn tuning mechanism fully counter-clockwise. Pointer should coincide with the first marking at the left of the scale. If it doesn't, remove chassis and slip pointer to correct point. Use isolation transformer if available. If not, connect capacitor in series with low side of signal generator and B-. Volume control at maximum volume position and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.05 MFD.	High side to pin 4 of 12SG7. Low side to B-.	455KC	1500KC	Across voice coil	A1,A2.	Adjust for maximum output. If isolation trans. is not used, reduce dummy ant. to .001 MFD. to reduce excessive hum modulation.
.05 MFD.	High side to pin 8 of 12SA7. Low side to B-.	"	"	"	A3,A4, A1,A2.	"
50 MMF.	High side to ant. post. Low side to chassis.	1500KC	"	"	A5	Reinstall in cabinet. Trimmers may be reached through the hole in loop assembly. Adjust for maximum output.
50 MMF.	"	"	"	"	A6	Adjust for maximum output.

DISASSEMBLY INSTRUCTIONS

1. Remove the dial control push-on type knobs and felt washers.
2. Remove five screws holding back cover board to cabinet. Remove board.
3. Disconnect phono-motor plug.
4. Disconnect phono-pickup plug from chassis.
5. Remove the three hex head screws and washers holding chassis to cabinet.
6. Remove the two speaker tip plugs from the speaker receptacle.
7. Remove chassis.
8. Remove four nuts and washers from speaker bolts. Remove speaker.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		GEN. ELECT. PART No.	STANDARD REPLACEMENT		
1	Converter	12SA7	12SA7	8R	
2	IF Amp.	12SG7	12SG7	8BK	
3	Det.-AVC-AF	12SQ7	12SQ7	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	GENERAL ELECTRIC PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
6A	50	150	RCE-001	FP311	DY-307	EL-452	AF1010D	UP6CJ41	■ Filter
B	50	150					PRS25-50		▲ "
C	40	25							Cath. Bypass
7	.05	600	RCC-045	TP415	S-6-05	TC-15	684-05	DT6S5	Line Filter
8	.01	600	RCC-040	TP410	S-6-01	TC-11	684-01	DT6S1	50L6 Plate Bypass
9	.01	600	RCC-040	TP410	S-6-01	TC-11	684-01	DT6S1	Audio Coupling
10	.005	600	RCC-039	TP408	S-6-005	TC-25	684-005	DT6D5	Tone Compensation
11	.1	200	RCC-013	TP428	S-4-1	TC-1	484-.1	DT4P1	Feedback
12	.01	600	RCC-040	TP410	S-6-01	TC-11	684-01	DT6S1	Audio Coupling
13	.005	600	UCC-039	TP408	S-6-005	TC-25	684-005	DT6D5	" "
14	.05	600	UCC-045	TP415	S-6-05	TC-15	684-05	DT6S5	Phono Coupling
15	.05	600	UCC-045	TP415	S-6-05	TC-15	684-05	DT6S5	Phono Shield Isolation
16	.05	600	UCC-045	TP415	S-6-05	TC-15	684-05	DT6S5	Conv. Screen Bypass
17	.05	600	UCC-045	TP415	S-6-05	TC-15	684-05	DT6S5	AVC Filter
18	.1	600	UCC-048	TP418	S-6-1	TC-1	684-.1	DT6P1	Line Isolation
19	.01	600	UCC-040	TP410	S-6-01	TC-11	634-01	DT6S1	Ant. Coupling
20	150	500	RCU-113	MC236	M0.5-315	1FM-315	1468-00015	5W5T15	Audio Plate Bypass
21	330	500	RCU-115	MC241	M0.5-33	MS-33	1468-0003	5W5T3	IF Bypass Diode
22	100	500	RCU-112	MC235	M0.5-31	1FM-31	1468-0001	5W5T1	AVC Filter
23	47	500	RCU-110	MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor

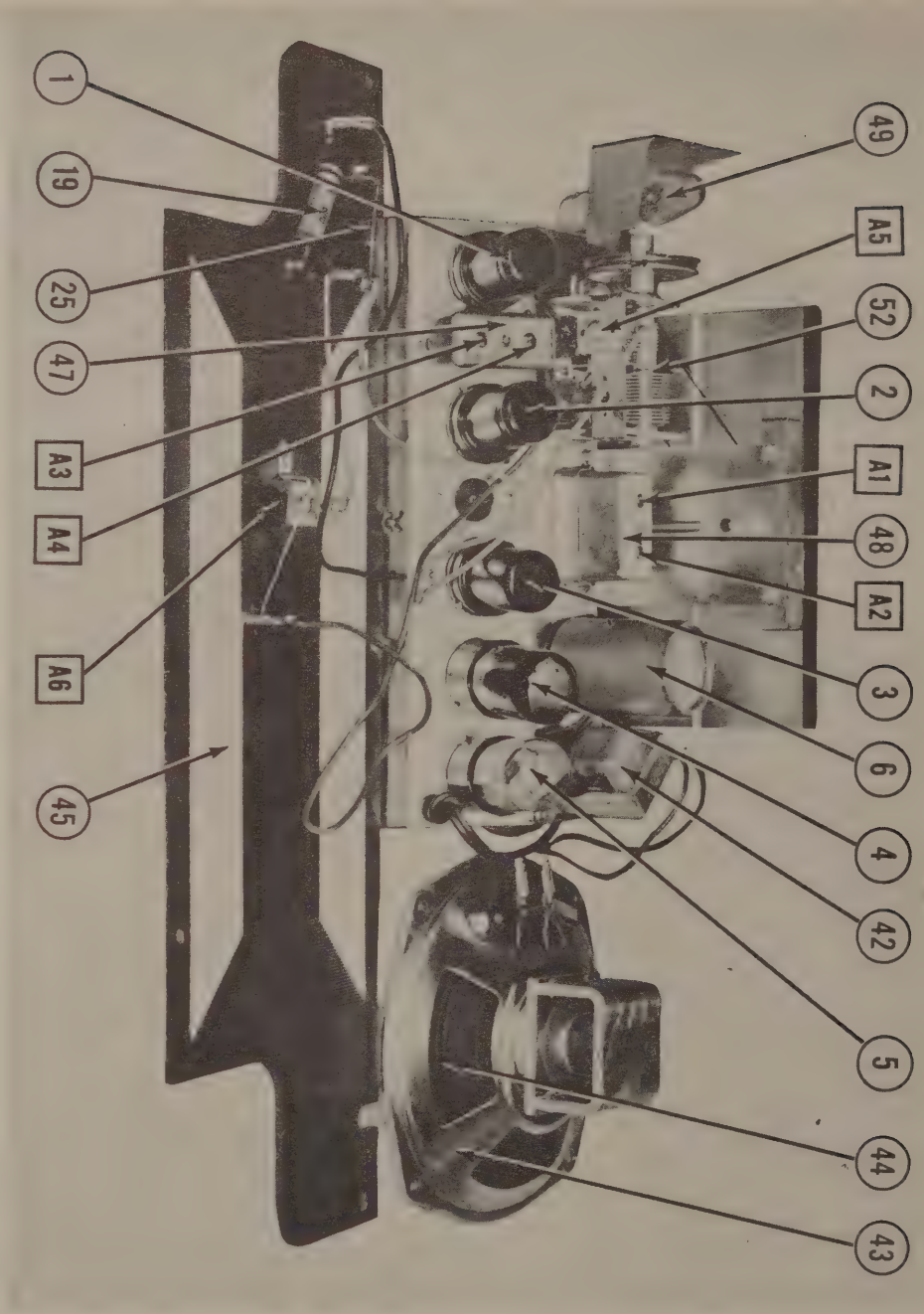
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	GEN. ELECT. PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
24A	2 Meg.	1	RR6-001	MK403	D13-139	AM-66-Z	Volume Control
B	Not Req.		Not Req.	Not Req.	E	KSS-3	Attach to 24A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	GEN. ELECT. PART No.	IRC PART No.	
25	470Ω	½	URD-041	BTS-470	Yl.-Vi.-Br. Antenna Loading
26	22KΩ	½	URD-081	BTS-22K	Red-Red-Or. Oscillator Grid
27	470KΩ	½	URD-113	BTS-470K	Yl.-Vi.-Yl. Line Isolation
28	2.2 Meg.	½	URD-129	BTS-2.2 Meg	Red-Red-Grn. AVC Network
29	470Ω	½	URD-041	BTS-470	Yl.-Vi.-Br. Converter Decoupling
30	47KΩ	½	URD-089	BTS-47K	Yl.-Vi.-Or. Diode Filter
31	220KΩ	½	URD-105	BTS-220K	Red-Red-Yl. Diode Load
32	1000Ω	½	URD-049	BTS-1000	Br.-Blk.-Red Feedback
33	5.6 Meg.	½	URD-139	BTS-5.6 Meg	Grn.-Blue-Grn. 1st AF Grid
34	470KΩ	½	URD-113	BTS-470K	Yl.-Vi.-Yl. 1st AF Plate
35	470KΩ	½	URD-113	BTS-470K	Yl.-Vi.-Yl. Output Grid
36	150Ω	½	URD-029	BW-½-150	Br.-Grn.-Br. Output Cathode
37	27Ω	½	URD-011	BW-½-27	Red-Vi.-Blk. Degeneration
38	1200Ω	2	URF-051	BT-2-1200	Br.-Red-Red Filter
39	18Ω	1	URE-007	BW-1-18	Br.-Gray-Blk. Rectifier Ballast
40	220KΩ	½	URD-105	BTS-220K	Red-Red-Yl. Series Phono
41	220KΩ	½	URD-105	BTS-220K	Red-Red-Yl. Series Phono

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		GEN. ELECT. PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
42	2000Ω	3.7Ω	150Ω	.4Ω	RTO-001	A-3876*	T-22S45*		*Drill one new mounting hole 52J945

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			GEN. ELECT. PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-109		
43A	PM	3.7Ω	ROP-006	Mod. P6-W		
B			UOP-625			Alternate speaker
	CONE DIA.	VC DIA.				
44	6"	5/8"	NOT READILY	REPLACEABLE-USE COMPLETE SPEAKER UNIT.		

R F COILS

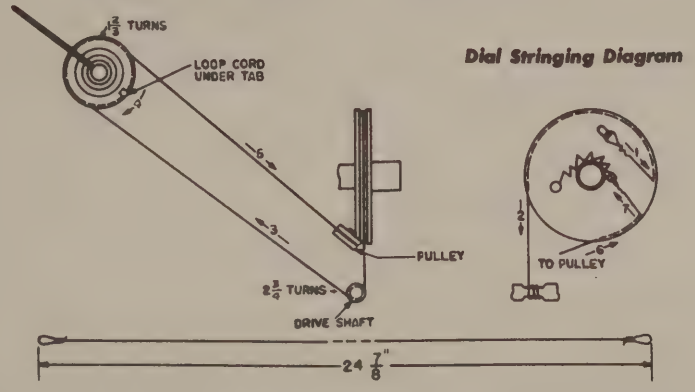
ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	GEN. ELECT. PART No.	MEISSNER PART No.	
45	Loop Ant.	0Ω	2Ω	RLL-002		
46	Osc. Coil	.8Ω	8Ω	RLC-018		
47	Input IF	5.5Ω	5.6Ω	RTL-001		
48	Output IF	5.8Ω	5.8Ω	RTL-002		

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					GEN. ELECT. PART No.		
49	Cand. Screw	115	.05		UDL-018		Type C7

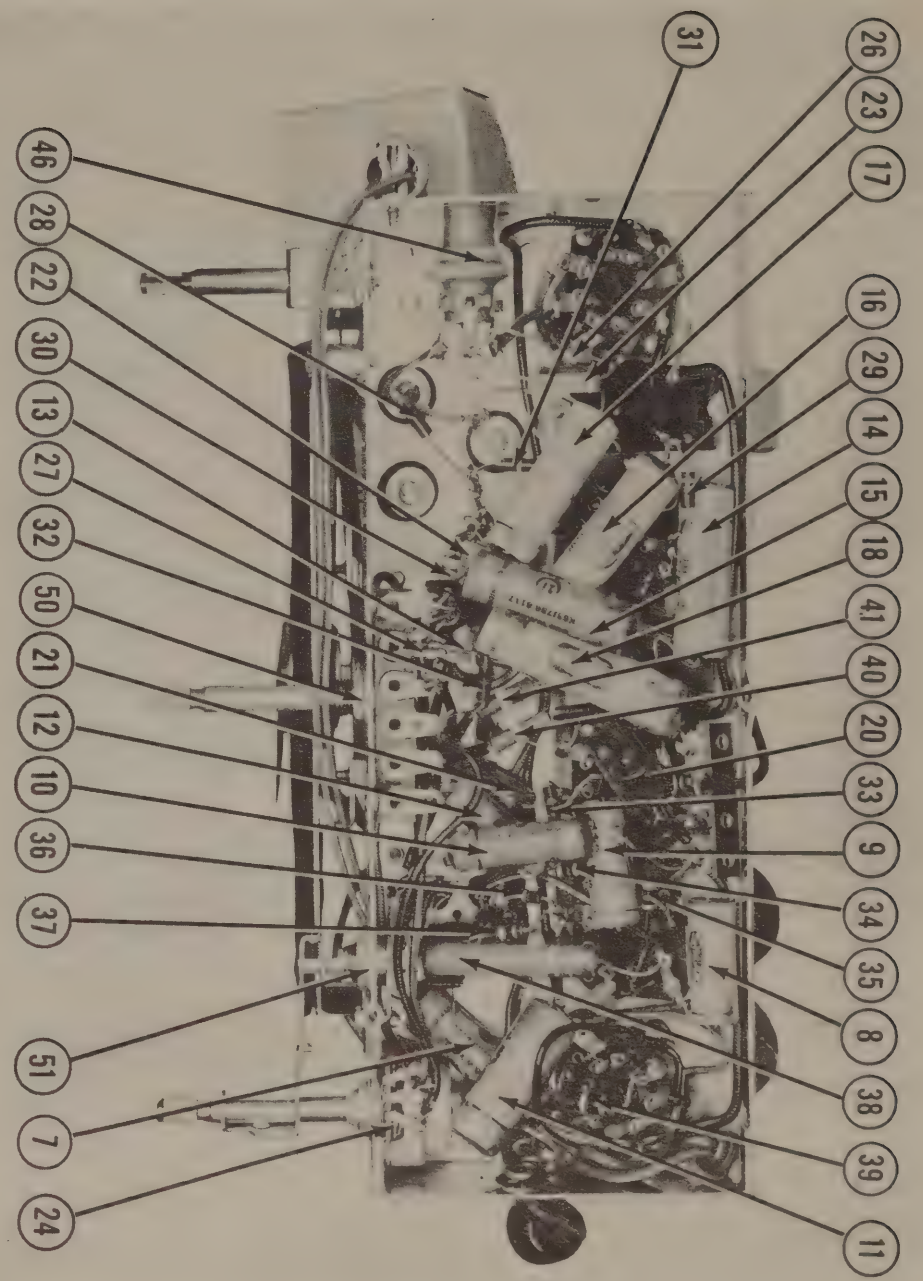
MISCELLANEOUS

ITEM No.	PART NAME	GEN. ELECT. PART No.	NOTES
50	Switch	RSW-001	Radio-Phono
51	Tone Switch	RSW-002	Tone Control
52	Tuning Cap.	RCT-002	2 Gang Variable Cap.
A6	Trimmer Cap.	RCY-005	Ant. Adj. (2-20 MMF)
	Knob	RDK-002	Radio-Phono
	"	RDK-003	Volume
	"	RDK-005	Tone Switch
	"	RDK-006	Tuning
	Pointer	RDP-001	Dial
	Dial Scale	RDS-003	
	Phono-Motor	RBH-001	Assembly
	Pick-up	RPC-014	Crystal Cartridge
	Arm	RPX-012	Tone Arm Assby. with Pick-up
	Switch	RSS-001	Phono-Motor

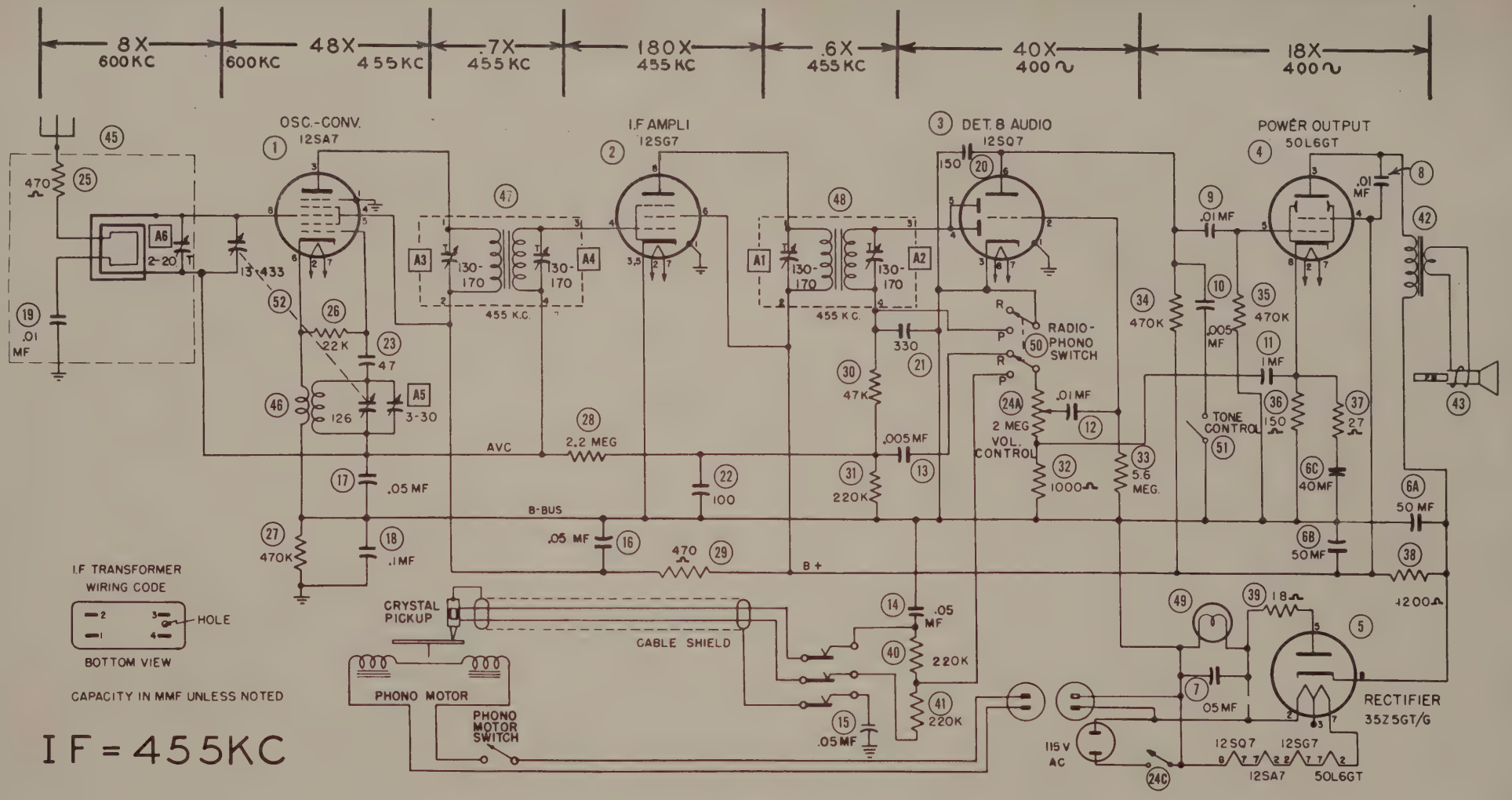


Dial Stringing Diagram

CHASSIS—BOTTOM VIEW



GENERAL ELECTRIC MODEL 106



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	0 V.	23V.AC	90V.DC	90V.DC	-3.8V.DC	0V.	12V.AC	-.4V.DC
2	12SG7	0 V.	23V.AC	0V.	-.4V.DC	0 V.	95V.DC	33.5V.AC	95V.DC
3	12SQ7	0 V.	-.5VDC	0V.	-.47V.DC	-.47V.DC	52V.DC	12V.AC	0 V.
4	50L6GT	0 V.	83V.AC	120V.DC	95V.DC	0V.	0V.	33.5V.AC	6V.DC
5	35Z5GT	0 V.	117V.AC	109V.AC	117V.AC	116V.AC	117V.AC	83V.AC	125V.AC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	410K Ω	20 Ω	50K Ω	50K Ω	19K Ω	.5 Ω	11 Ω	1.9MEG
2	12SG7	410K Ω	20 Ω	0 Ω	1.9MEG	0 Ω	50K Ω	28 Ω	50K Ω
3	12SQ7	410 K Ω	5MEG	0 Ω	220K Ω	220K Ω	520K Ω	11 Ω	0 Ω
4	50L6GT	INF	52 Ω	50K Ω	50K Ω	400K Ω	INF	28 Ω	130 Ω
5	35Z5GT	INF	72 Ω	70 Ω	72 Ω	87 Ω	72 Ω	52 Ω	50K Ω

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

468-14

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

GENERAL ELECTRIC
MODELS 200, 201, 203, 205, 205M

GENERAL ELECTRIC
MODELS 200, 201, 203, 205, 205M

GENERAL ELECTRIC MODEL 200

TRADE NAME	General Electric Models 200, 201, 203, 205, 205M
MANUFACTURER	General Electric Co., Electronics Dept., Bridgeport, Conn.
TYPE SET	AC-DC Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types 12SG7 RF Amp., 12SA7 Converter, 12SK7 IF Amp., 12SQ7 Det.-AVC-AF, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1600KC
RATING	.340 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

To check pointer, turn tuning mechanism fully counter-clockwise. Pointer should coincide with the first marking at the left of the scale. If it doesn't, remove chassis and turn pointer to correct point. Use isolation transformer if available. If not, connect capacitor in series with the low side of signal generator and B-. Set volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.05 MFD.	High side to pin #4 of 12SK7. Low side to B-.	455KC	1500KC	Across voice coil	A1,A2,	Adjust for maximum output. IF isolation trans. is not used, reduce dummy ant. to .001 MFD. to reduce excessive hum modulation.
.05 MFD.	High side to pin #8 of 12SA7. Low side to B-.	"	"	"	A3,A4, A1,A2.	"
50 MMF.	High side to ant. post. Low side to chassis.	1500KC	"	"	A5	Reinstall in cabinet. Trimmers may be reached through the hole in loop assembly. Adjust for maximum output.
50 MMF.	"	"	"	"	A6	Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		GEN. ELECTRIC PART No.	STANDARD REPLACEMENT		
1	RF Amp.	12SG7	12SG7	6BK	
2	Converter	12SA7	12SA7	6R	
3	IF Amp.	12SK7	12SK7	6N	
4	Det.-AVC-AF	12SQ7	12SQ7	8Q	
5	Power Output	35L6GT	35L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	GENERAL ELECTRIC PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
7A	50	150		2N521	DSB-2x50-150	EL-35	PRSA150-40-40	EZ5515	Filter - Red
B	50	150							" - "
8	.05	600		TP415	S-6-05	TC-15	684-05	DT6S5	Line Filter
9	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	35L6 Plate Bypass
10	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	Audio Coupling
11	.1	200		TP428	S-4-1	TC-1	484-.1	DT4P1	Feedback
12	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	Audio Coupling
13	.005	600		TP408	S-6-005	TC-25	684-005	DT6D5	" "
14	.05	600		TP415	S-6-05	TC-15	684-05	DT6S5	AVC Filter
15	.1	600		TP418	S-6-1	TC-1	684-.1	DT6P1	Line Isolating
16	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	Ant. Coupling
17	.05	600		TP415	S-6-05	TC-15	684-05	DT6S5	IF Plate Decoupling
18	150	500		MC236	MO.5-315	1FM-315	1468-00015	5W5T15	Audio Plate Bypass
19	330	500		MC241	MO.5-33	MS-33	1468-0003	5W5T3	IF Bypass Diode
20	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	AVC Filter
21	47	500		MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor
22	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	RF Coupling

CONTROLS

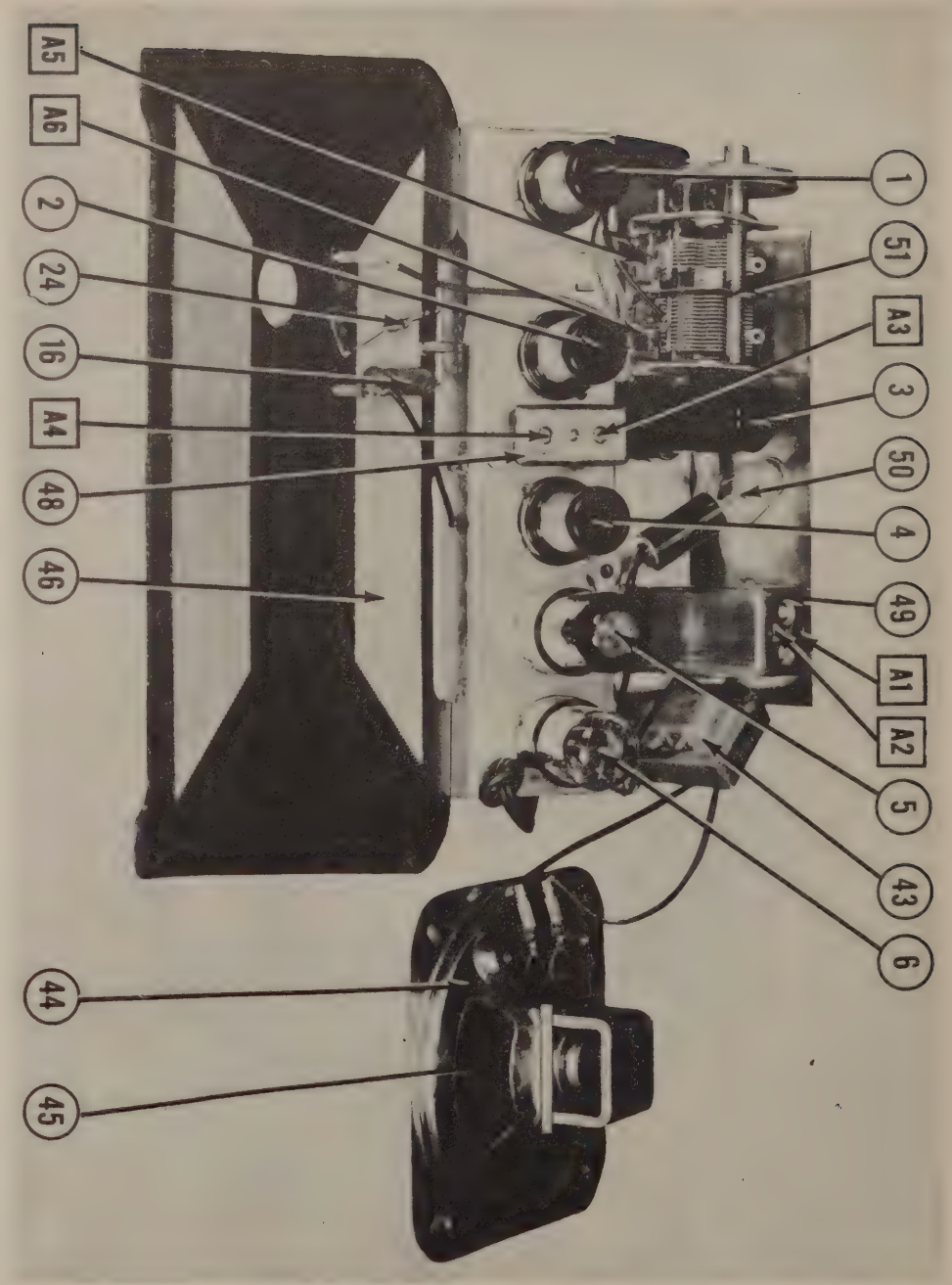
ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	GEN. ELECT PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
23A	2 Meg.	1		MK403	D13-139	AM-66-Z	Volume Control
B	Shaft			Not Req.	E	KSS-3	Attach to 23A per instructions
C	Switch			M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	GEN. ELECT, PART No.	IRC PART No.	
24	470Ω	½		BTS-470	Yl.-Vi.-Br. Antenna Loading
25	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Line Isolating
26	8200Ω	½		BTS-8200	Gray-Red-Red RF Plate Load
27	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Converter Grid
28	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
29	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
30	470Ω	½		BTS-470	Yl.-Vi.-Br. IF Decoupling
31	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Diode Filter
32	220KΩ	½		BTS-220K	Red-Red-Yl. AVC Load
33	1000Ω	½		BTS-1000	Br.-Blk.-Red Tone Compensation
34	5.6 Meg.	½		BTS-5.6 Meg.	Grn.-Blue-Grn. 1st AF Grid
35	1000Ω	½		BTS-1000	Br.-Blk.-Red Tone Compensation
36	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
37	150Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
38	1000Ω	2		BT-2-1000	Br.-Blk.-Red Filter
39	18Ω	½		BW-½-18	Br.-Gray-Blk. Rectifier Ballast
40	150Ω	½		BW-½-150	Br.-Grn.-Br. RF Cathode-See Note 1
41	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Tone Compensation-See Note 1
42	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. 1st AF Grid

Note 1 - Not used in all models.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		GEN. ELECT. PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
43	2000Ω	3.7Ω	150Ω	.4Ω		A-3876†	T-22S45†		†Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			GEN. ELECTRIC PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-108		
44	PM	3.7Ω	S525C-10	Mod. P6-X		
	CONE DIA.	VC DIA.				
45	5¼"	½"	NOT READILY	REPLACEABLE-USE COMPLETE SPEAKER UNIT		

R F COILS

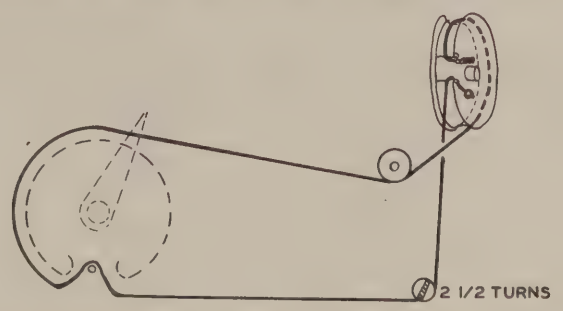
ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	GEN. ELECT. PART No.	MEISSNER PART No.	
46A	Loop Ant	0Ω	2Ω			Used on Models 200, 201
B	" "					" " " 203, 205, 205M
47	Osc. Coil	.8Ω	8Ω		14-1040	
48	Input IF	7.5Ω	5.8Ω			
49	Output IF	28Ω	29Ω		16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					GEN. ELECT. PART No.		
50	Cand. Screw	115	.08				Type C7

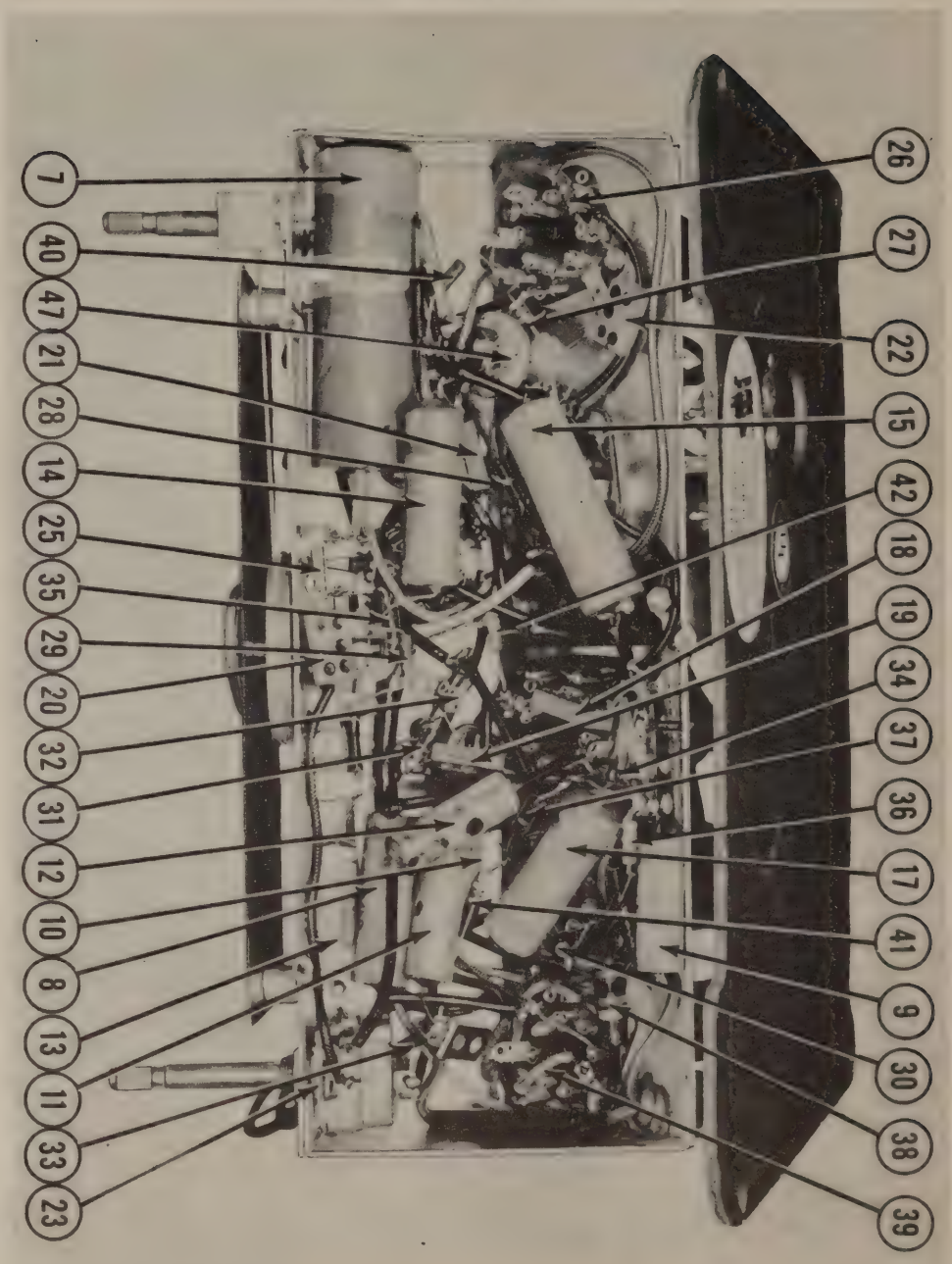
MISCELLANEOUS

ITEM No.	PART NAME	GEN. ELECT. PART No.	NOTES
51	Tuning Cap.		2 Gang Variable Cap.
A5	Trimmer Cap.		Osc. Adj. 4-34MMF.

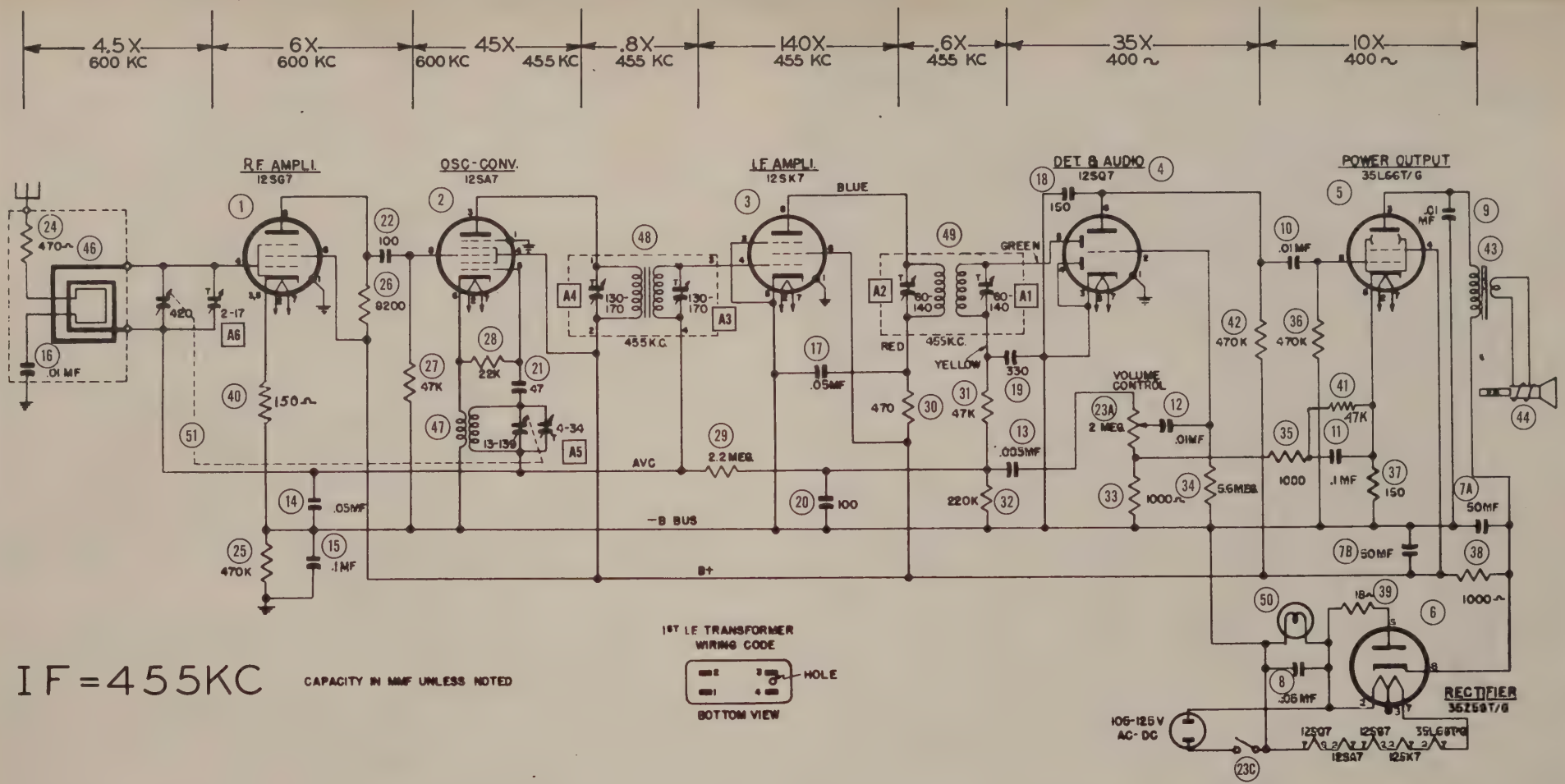


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



GENERAL ELECTRIC MODELS 200, 201, 203, 205, 205M



IF=455KC

CAPACITY IN MMF UNLESS NOTED

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SG7	-.07 V.DC	36.5V.AC	.82 V.DC	-.4V.DC	.82V.DC	82 V.DC	24.5V.AC	62V.DC
2	12SA7	-.07 V.DC	13V.AC	80V.DC	80V.DC	-4.4V.DC	0V.	24.5V.AC	.3V.DC
3	12SK7	-.07 V.DC	36.5V.AC	0V.	-.4V.DC	0V.	92 V.DC	48V.AC	85V.DC
4	12SQ7	-.07 V.DC	-.5V.DC	0V.	0V.	-.1V.DC	56V.DC	0V.	13V.AC
5	35L6GT	0V.	48V.AC	120V.DC	92V.DC	0V.	86V.DC	85V.AC	5.5V.DC
6	35Z5GT	0V.	117V.AC	109V.AC	0V.	117V.AC	123V.DC	85V.AC	125V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SG7	400Kα	98α	138α	2.2 MEG.	138α	70Kα	21α	78Kα
2	12SA7	400Kα	13α	70Kα	70Kα	23.5Kα	.5α	21α	37Kα
3	12SK7	400 Kα	28α	0α	2.2 MEG.	0α	70Kα	34α	70Kα
4	12SQ7	400 Kα	5 MEG.	0α	0α	230 Kα	540Kα	0α	13α
5	35L6GT	INF.	34α	70Kα	70Kα	420Kα	70Kα	50α	130α
6	35Z5GT	INF.	65α	60α	INF.	65α	70Kα	50α	70Kα

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

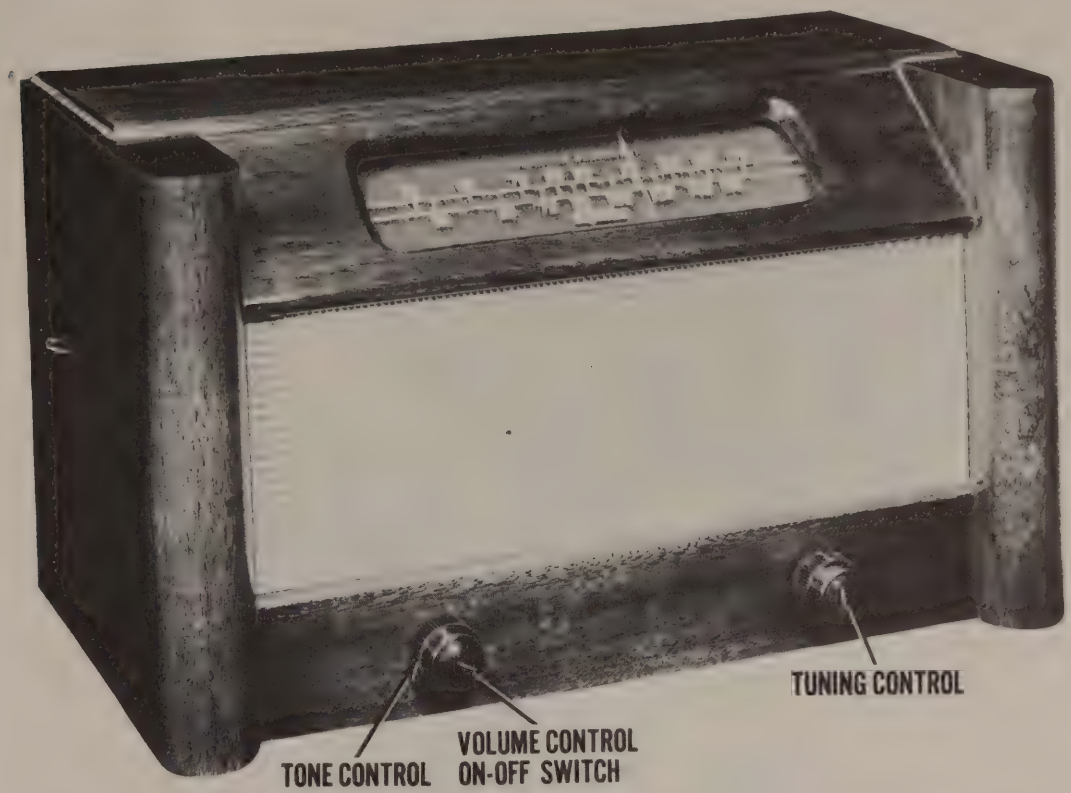
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

468-15

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

GILFILLAN
MODELS 66A, 66AM, 66D, 66DM



GILFILLAN
MODELS 66A, 66AM, 66D, 66DM

GILFILLAN MODEL 66AM

TRADE NAME	Gilfillan Models 66A, 66AM, 66D, 66DM
MANUFACTURER	Gilfillan Bros., Inc., 1815 Venice Blvd., Los Angeles, Calif.
TYPE SET	AC Operated Superheterodyne - Self Contained Loop Antenna (Models 66A & 66D have Push Button Tuning.)
TUBES (SIX)	Types, 6SK7 RF Amp., 6SA7 Converter, 6SK7 IF Amp., 6SQ7 Det.-AVC-AF, 6V6GT Power Output, 6X5GT Rectifier.
POWER SUPPLY	117 Volts AC
TUNING RANGE—BROADCAST	525-1700KC RATING .520 Amps. @ 117VAC

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer at index mark at left end of dial. Set antenna jumper for outside antenna operation. Set volume control at maximum volume and output from signal generator no higher than necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
100 MMF.	High side to ant terminal. Low side to chassis.	455KC	Low freq. end. (Variable fully closed)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
100 MMF.	"	"	"	"	A5	Adjust for minimum output.
100 MMF.	"	1600KC	1600KC	"	A6,A7, A8.	Adjust for maximum output in order given.
100 MMF.	"	600KC	Tune for maximum output.	"	A9	Rock variable and adjust for maximum output. Recheck A6, A7, and A8 at 1600KC.
			Tune in a weak station near 1600KC.	"	A10	Disconnect signal generator, change ant. jumper for loop operation. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: GILFILLAN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SK7	6SK7	8N	
2	Converter	6SA7	6SA7	8R	
3	IF Amp.	6SK7	6SK7	8N	
4	Det.-AVC-AF	6SQ7	6SQ7	8Q	
5	Power Output	6V6GT	6V6GT	7AC	
6	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: GILFILLAN PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	20	450		FP339	DY-312	EL-350	AF44J	UP6BJ38	■ Filter
B	20	450							▲ "
C	20	25					PRS25-25	BR202A	Cath. Bypass
8	.1	400		TP428	S-4-1	TC-1	484-.1	DT4P1	RF Bypass Pwr. Supp.
9	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Tone Compensation
10	.02	400		TP423	S-4-02	TC-12	484-02	DT4S2	Audio Coupling
11	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	" "
12	.1	400		TP428	S-4-1	TC-1	484-.1	DT4P1	Screen Bypass
13	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
14	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	" "
15	250	500		MC240	M0.5-325	1FM-325	1468-00025	5W5T25	Audio Plate Bypass
16	50	500		MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GILFILLAN PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
17A	500KΩ	1	A10-23112				Volume Control & Switch-See Note
17B	500KΩ	1					Tone Control -See Note

Note -Controls ganged and operated by concentric shafts.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GILFILLAN PART No.	IRC PART No.	IDENTIFICATION CODES
18	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AVC Network
19	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
20	10KΩ	5		AB-10K	Screen Dropping
21	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
22	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vi.-Grn. 1st AF Grid
23	220KΩ	½		BTS-220K	Red-Red-Yl. 1st AF Plate Load
24	470Ω	1		BTA-470	Yl.-Vi.-Br. Output Cathode
25	220Ω	½		BW-½-220	Red-Red-Br. Feedback
26	15Ω	½		BW-½-15	Br.-Grn.-Blk. 1st AF Cathode
40	850Ω	10		AB-800	Current Limiter-Note 1

Note 1 - Not used in all models.

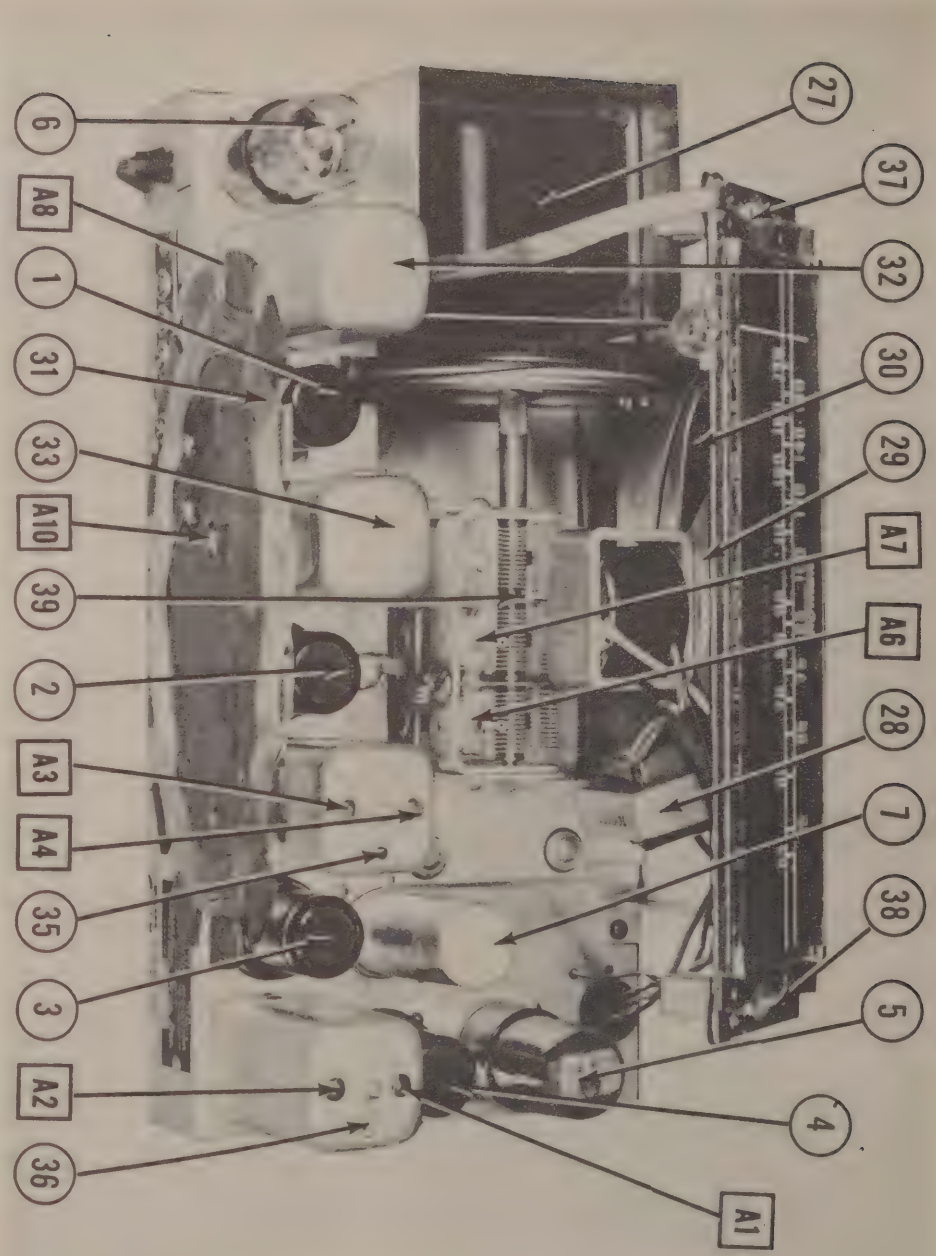
TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: GILFILLAN PART No.	STANCOR PART No.	THORDARSON PART No.	INSTALLATION NOTES
27	117VAC @ .52A	650VCT @ .07A	6.5VAC @ 2.0A		5458G	P-6120	T22R34*	*Use universal mounting brackets.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: GILFILLAN PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
28	7200Ω	3Ω	460Ω	.45Ω	Part of C14-23101	A-3878	T-22S47		

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA GILFILLAN PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD RES.	VC IMP.				
29A	1450Ω	3.0Ω	C14-23101			
29B	PM		66AM7‡			
	CONE DIA.	VC DIA.				
30	4"x6"	½"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

‡On models using 5" PM speaker (29B), 6H. 500Ω filter choke is used with 850Ω current limiting resistor (4C).

R F COILS

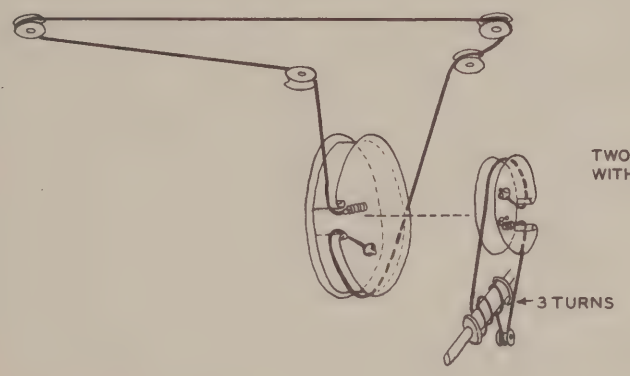
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA GILFILLAN PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
31	Loop Ant.		1Ω	66AM-214		
32	Ant. Coil	80Ω	3.5Ω	66AM-36B		
33	RF Coil & Trap	80Ω	3.5Ω	66AM-33A		
34	Osc. Coil	1.1Ω	7.5Ω	66AM-37B	14-1040	
35	Input IF	28Ω	28Ω	B16-23222	16-6658	
36	Output IF	28Ω		B16-23223	16-6670	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA GILFILLAN PART No.		INSTALLATION NOTES
37	Bayonet	6-8	0.15	Brown			Type 47
38	"	6-8	0.15	"			" "

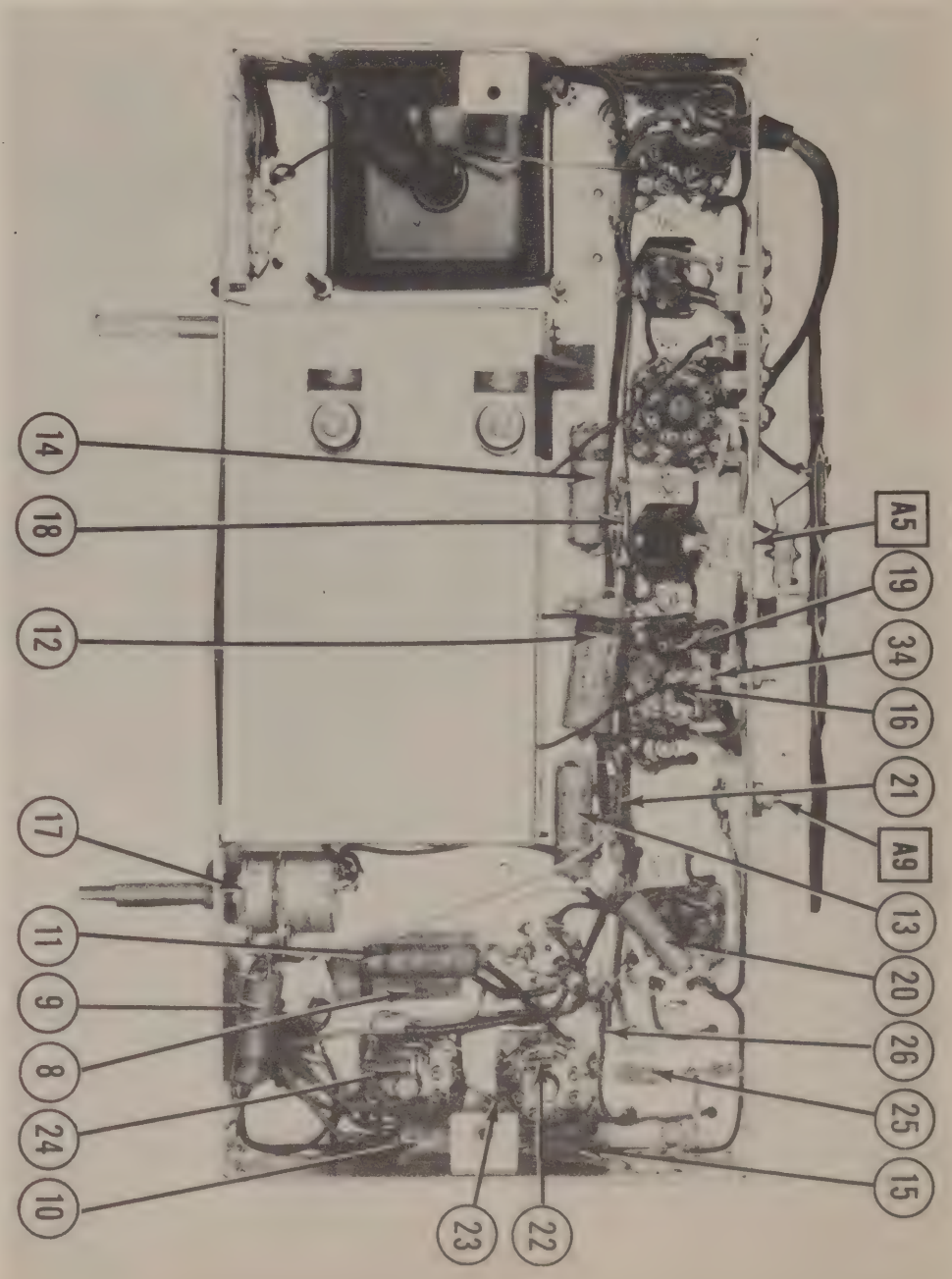
MISCELLANEOUS

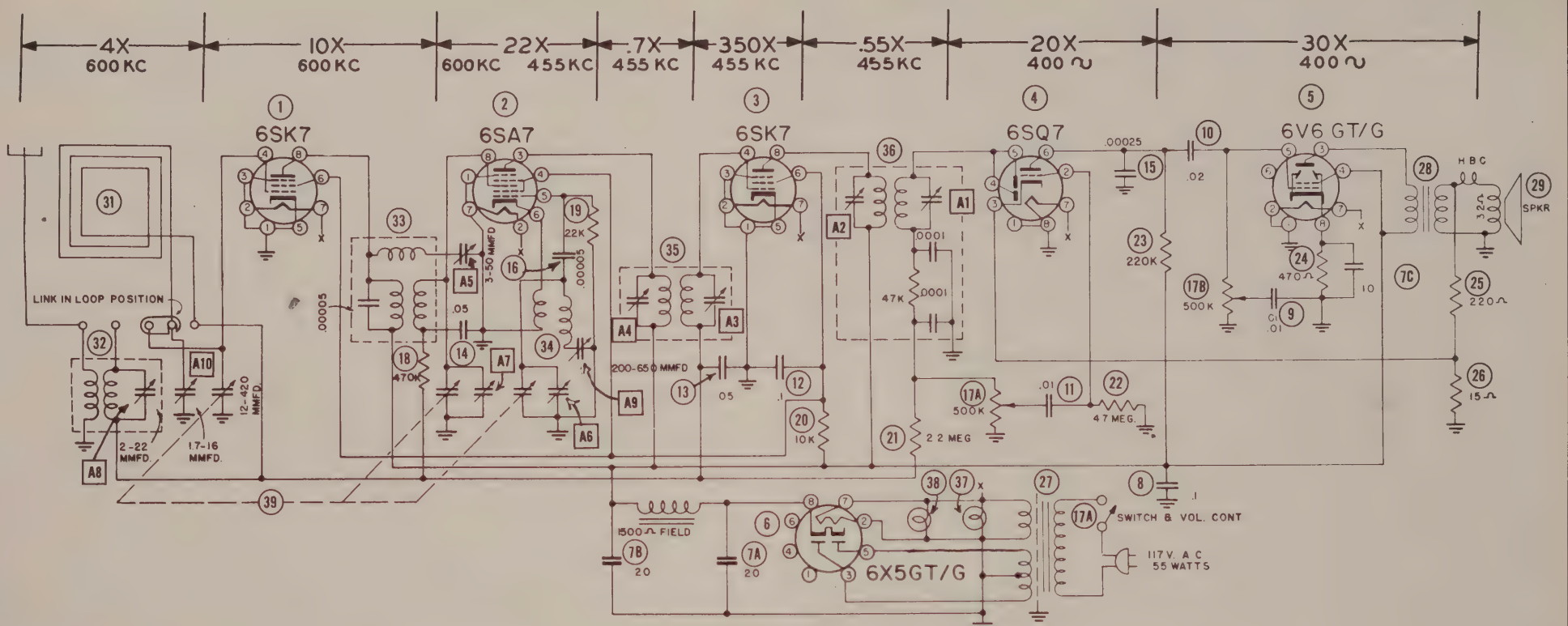
ITEM No.	PART NAME	GILFILLAN PART No.	NOTES
39	Tuning Cap.	66AM-420	3 Gang Variable Cap. 12-420 MMFD.



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0V.	0V.	0V.	-.4V.DC	0V.	88V.DC	6.4V.AC	227 V.DC
2	6SA7	0V.	6.4V.AC	229V.DC	88V.DC	-.1V.DC	0V.	0V.	-37V.DC
3	6SK7	0V.	0V.	0V.	-.4V.DC	0V.	88V.DC	6.4V.AC	229V.DC
4	6SQ7	0V.	-.4V.DC	0V.	-.4V.DC	-.4V.DC	98V.DC	6.4V.AC	0V.
5	6V6GT	0V.	0V.	218V.DC	229V.DC	0V.	0V.	6.4V.AC	14V.DC
6	6X5GT	0V.	0V.	325V.AC	0V.	325V.AC	0V.	6.4V.AC	355V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0Ω	0Ω	0Ω	2.3MEG.	0Ω	70KΩ	.1Ω	60KΩ
2	6SA7	0Ω	.1Ω	60KΩ	70KΩ	18KΩ	.8Ω	0Ω	2.8MEG.
3	6SK7	0Ω	0Ω	0Ω	2.3MEG.	0Ω	70KΩ	.1Ω	60KΩ
4	6SQ7	0Ω	3.6MEG.	14Ω	520KΩ	520KΩ	280KΩ	.1Ω	0Ω
5	6V6GT	0Ω	0Ω	60KΩ	60KΩ	420KΩ	INF.	.1Ω	400Ω
6	6X5GT	INF.	0Ω	175Ω	INF.	160Ω	INF.	.1Ω	60KΩ

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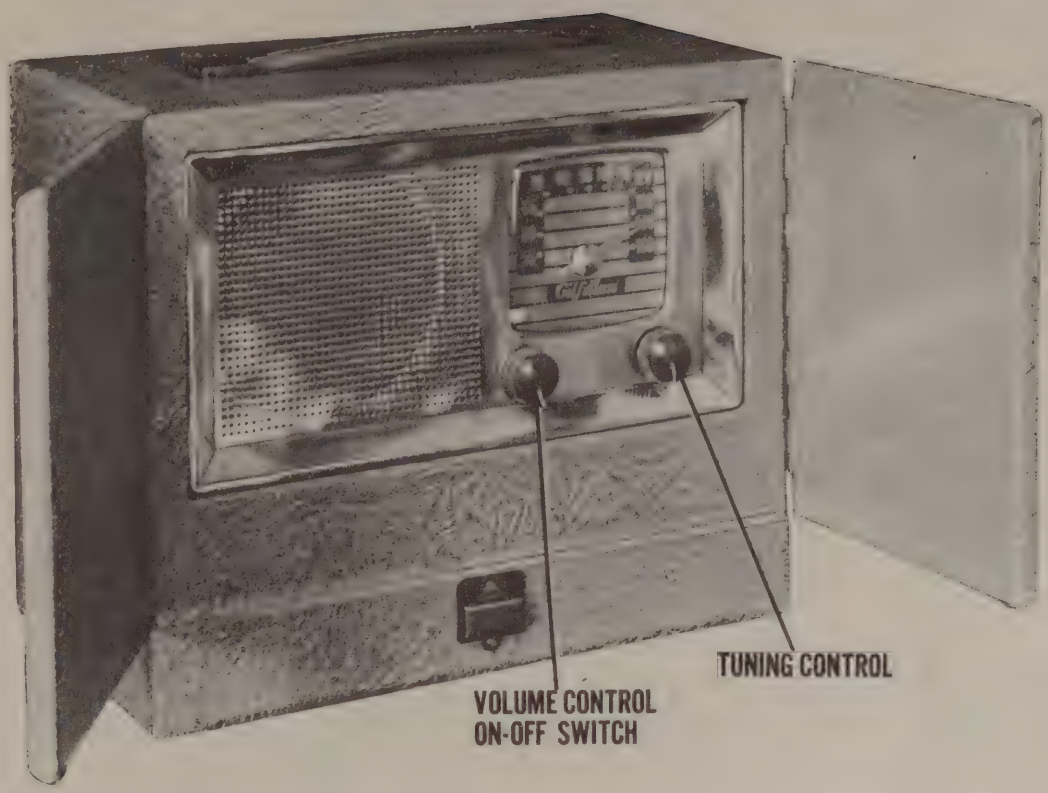
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

468-16

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

GILFILLAN
MODEL 66B



GILFILLAN
MODEL 66B

GILFILLAN MODEL 66B

TRADE NAME	Gilfillan Model 66B "The Overland"
MANUFACTURER	Gilfillan Bros. Inc., 1815 Venice Blvd., Los Angeles, Calif.
TYPE SET	Three Power Portable AC-DC Battery Superheterodyne Receiver - Self Contained Loop Antenna.
TUBES (SIX)	Types, 1N5GT RF Amp., 1A7GT Converter, 1N5GT IF Amp., 1H5GT Det.-AVC-AF, 3Q5GT Power Output, 117Z6GT Rectifier.
POWER SUPPLY	117 Volts AC-DC - 9V "A" Supply & 90V "B" Supply in Battery Pack or separate batteries.
TUNING RANGE—BROADCAST	540-1620KC RATING .200A. @ 117V AC - 55MA @ 9V DC & 12.3MA @ 90V DC

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer horizontal at left end of dial. Use battery power for alignment whenever possible. If a-c power is used use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to grid cap of 1A7. Low side to B-.	455KC	Low freq.end. Variable fully closed.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If a-c power is used without an isolation trans., reduce dummy ant. to 200 MMF. to reduce excessive hum modulation.
200 MMF.	High side to ant post. Low side to ground post.	1600KC	1600KC	"	A5	Adjust for maximum output.
200 MMF.	"	"	Tune for maximum output.	"	A6,A7.	" " " "
200 MMF.	"	600KC	"	"	A8	Rock variable and adjust for maximum output. Recheck A5, A6 and A7 at 1600KC.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: GILFILLAN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	1N5GT	1N5GT	5Y	
2	Converter	1A7GT	1A7GT	7Z	
3	IF Amp.	1N5GT	1N5GT	5Y	
4	Det.-AVC-AF	1H5GT	1H5GT	5Z	
5	Power Output	3Q5GT	3Q5GT	7AP	
6	Rectifier	117Z6GT	117Z6GT	7Q	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: GILFILLAN PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150		FP311	DY-308	EL-352	AF88D4A	UP6CJ41	▲ Filter
B	50	150							■ "
C	10	25							▪ "
8	100	25		TC2501	M-100-50	UHC-102	PRS25-100	BRH251	Filament Bypass
9	.02	400		TP423	S-4-02	TC-12	484-02	DT4S2	Audio Coupling
10	.25	200		TP430	S-4-25	TC-2	484-.25	DT4P25	Pwr. Supp. Bypass
11	.25	200		TP430	S-4-25	TC-2	484-.25	DT4P25	" " " *
12	.25	200		TP430	S-4-25	TC-2	484-.25	DT4P25	Line Isolating
13	.25	200		TP430	S-4-25	TC-2	484-.25	DT4P25	Audio Plate Decoup.
14	.002	600		TP405	S-6-002	TC-22	684-002	DT6D2	Audio Coupling
15	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Conv. Screen Bypass
16	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	Rect. Bypass
17	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Conv. Grid Bypass
18	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
19	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Grid Capacitor
20	.25	200		TP430	S-4-25	TC-2	484-.25	DT4P25	AVC Filter *
21	1000	300		MC455	MO.3-21	1FM-21	1467-001	1W5D1	Audio Plate Bypass
22	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Diode Filter
23	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	" "
24	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Osc. Grid Capacitor
54	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Audio Grid Bypass *

*Not used in all models.

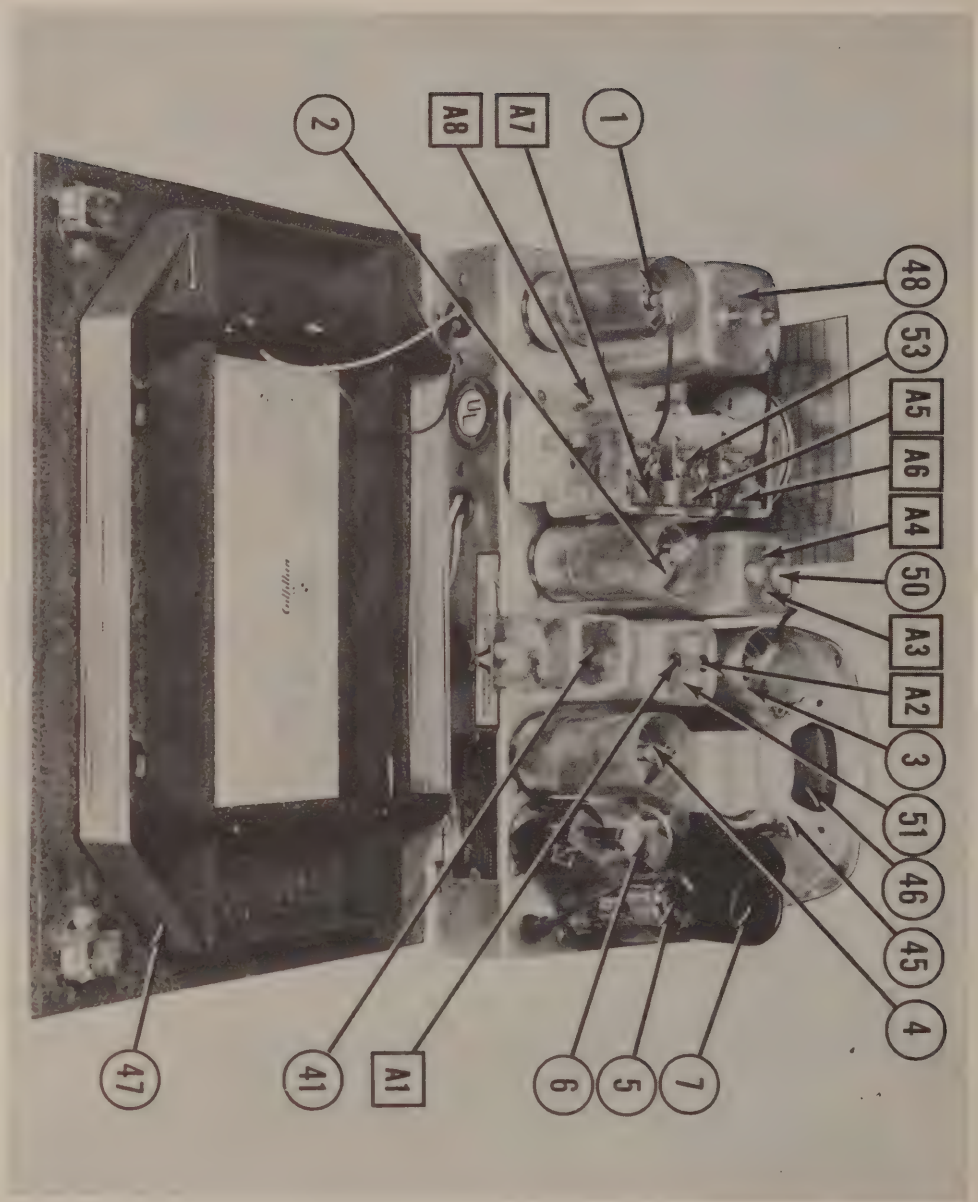
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GILFILLAN PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
25A	1 Meg.	1	A10-23114	MK402	D13-137	AM-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 25A per instructions.
C	Switch		" "	M27	42	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GILFILLAN PART No.	IRC PART No.	IDENTIFICATION CODES
26	2.7 Meg.	½		BTS-2.7 Meg.	Red-Vi.-Grn. AVC Network
27	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. " "
28	2.7 Meg.	½		BTS-2.7 Meg.	Red-Vi.-Grn. Converter Grid
29	180KΩ	½		BTS-180K	Br.-Gray-Yl. Oscillator Grid
30	100Ω	½		BW-½-100	Br.-Blk.-Yl. Filament String
31	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Plate Dropping
32	68KΩ	½		BTS-68K	Blue-Gray-Or. Converter Screen "
33	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vi.-Grn. IF Grid
34	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Diode Filter
35	8.2 Meg.	½		BTS-8.2 Meg.	Gray-Red-Grn. 1st AF Grid
36	150KΩ	½		BTS-150K	Br.-Grn.-Yl. 1st AF Plate Load
37	100Ω	½		BW-½-100	Br.-Blk.-Yl. Filament String
38	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Output Grid
39	220KΩ	½		BTS-220K	Red-Red-Yl. Line Isolation
40	220Ω	1		BT-1-220	Red-Red-br. Filament String
41	1975Ω	5		AB-2000	Filament String
42	47KΩ	½		BTS-47K	Yl.-Vi.-Or. 1st AF Plate Decoupling

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA			INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000~)	GILFILLAN PART NO.	STANCOR PART NO.	THORDARSON PART NO.	
43	64 MA	455Ω	6 Henries		C-1708	T20C52	

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		GILFILLAN PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
44	6800Ω	3.4Ω	500Ω	.25Ω	CS-0436	A-3878	T-22547		

SPEAKER

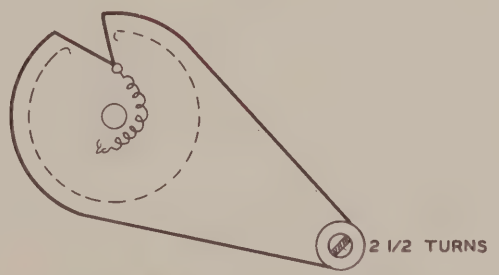
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			GILFILLAN PART No.	JENSEN PART No.		
45	FIELD	VC IMP.		ST-107		
	PM	3.4Ω		Mod.P5-V		
	CONE DIA.	VC DIA.				
46	4½"	½"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	GILFILLAN PART No.	MEISSNER PART No.	
47	Loop Ant.	.1Ω	1.6Ω			
48	RF Coil	7Ω	2.2Ω	B16-23167	14-7555	
49	Osc. Coil	2.3Ω	6Ω		14-1040	
50	Input IF	11.6Ω	11.5Ω	B16-23165	16-6658	
51	Output IF	15.3Ω	16Ω	B16-23164	16-6660	

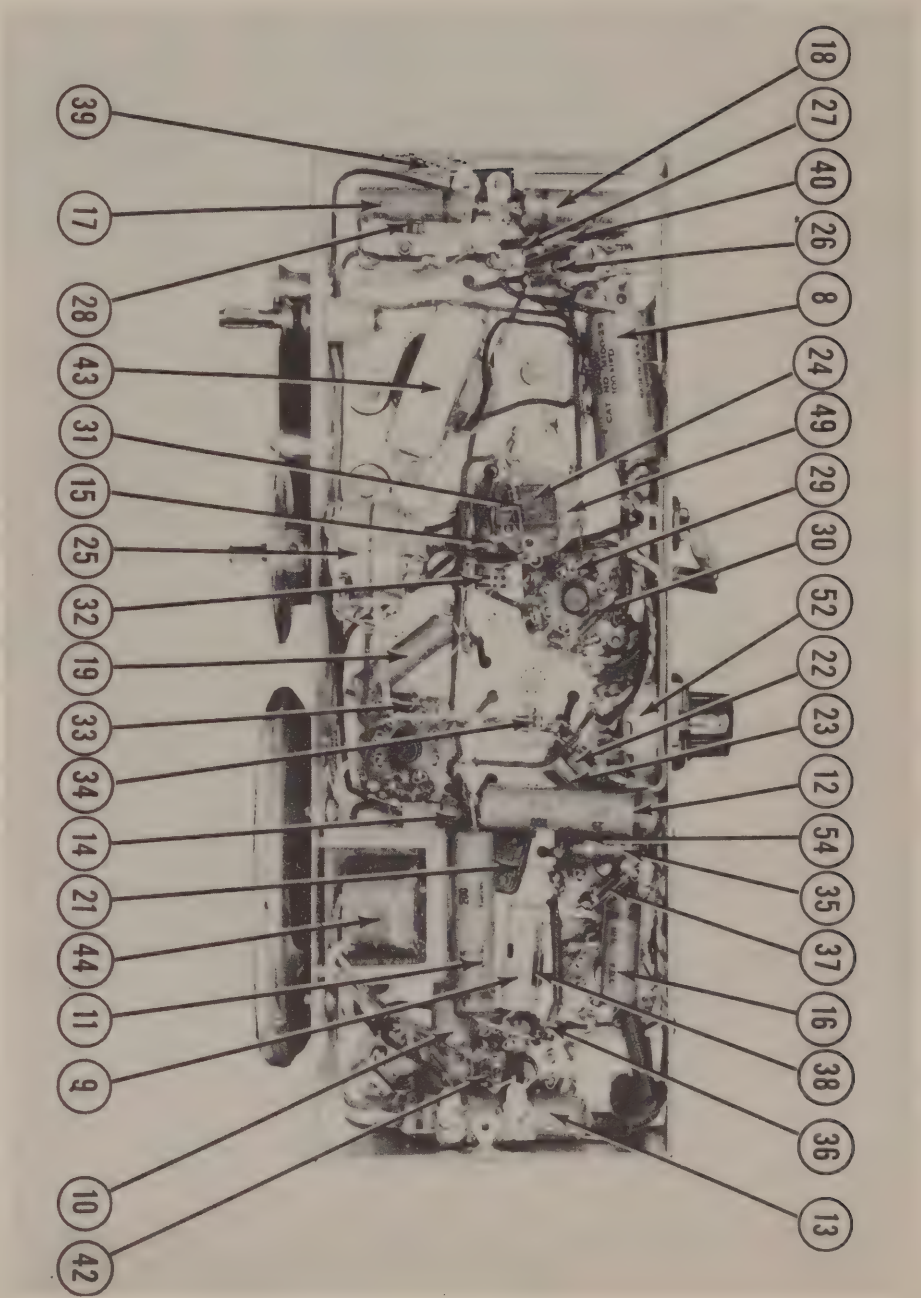
MISCELLANEOUS

ITEM No.	PART NAME	GILFILLAN PART No.	NOTES
52	Power Switch		4 Pole 2 Position
53	Tuning Cap.		3 Gang Variable Cap. 12-368 MMFD.
	A-B Pack		Ray-O-Vac AB994 or equiv.
	"A" Batteries		Ray-O-Vac 2-P83A or equiv.
	"B" Battery		Ray-O-Vac P430 or equiv.

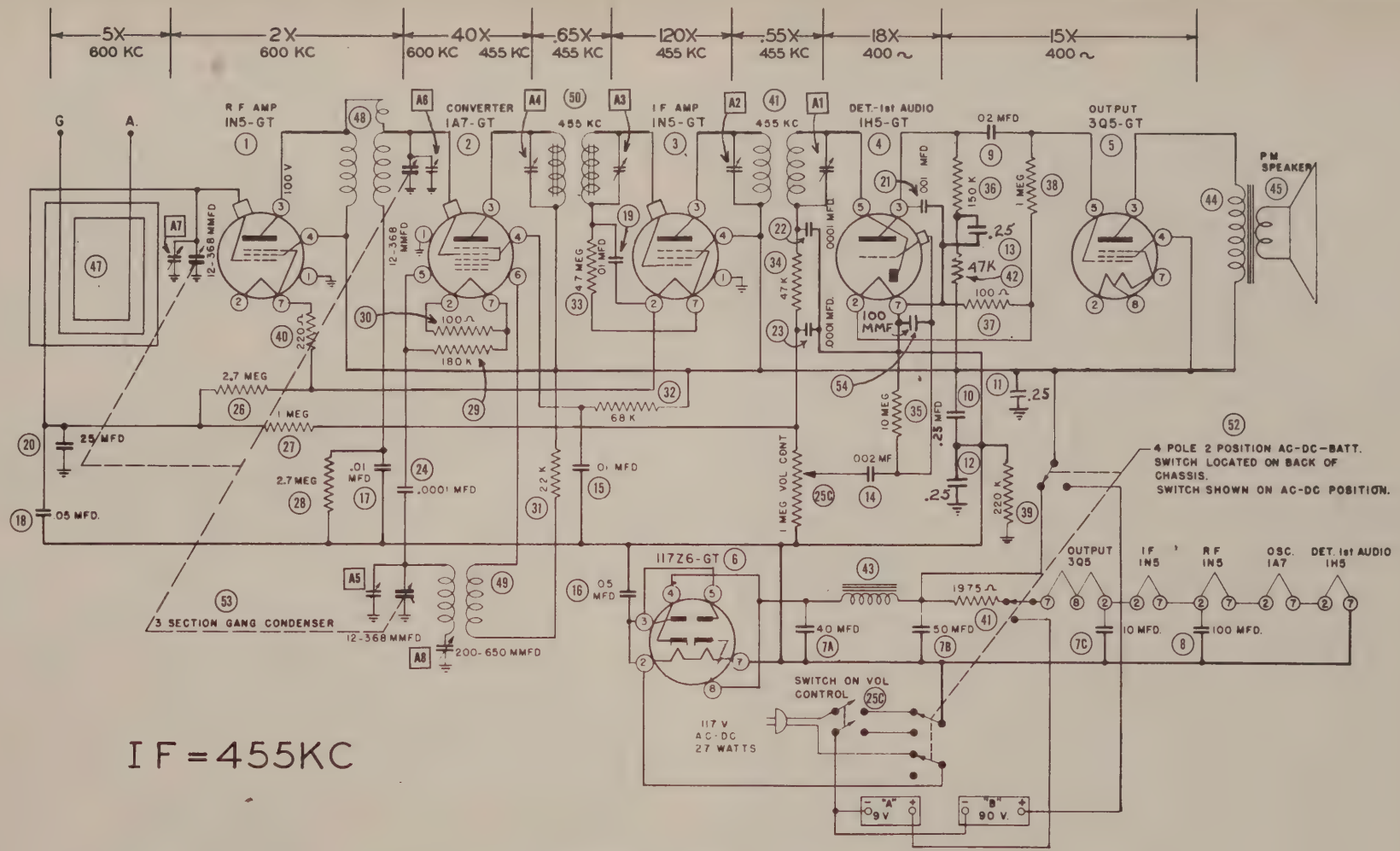


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



GILFILLAN MODEL 66B



I F = 455KC

NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN AC–DC POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1N5GT	.1V.DC	4.2V.DC	105V.DC	105V.DC	0V.	0V.	2.8V.DC	0V.	.3V.DC
2	1A7GT	.1V.DC	2.8V.DC	105V.DC	45V.DC	.8V.DC	67V.DC	1.4V.DC	0V.	0V.
3	1N5GT	.1V.DC	5.6V.DC	105V.DC	105V.DC	0V.	0V.	4.2V.DC	5.6V.DC	.2V.DC
4	1H5GT	.1V.DC	1.4V.DC	87V.DC	0V.	0V.	0V.	0V.	0V.	0V.
5	3Q5GT	0V.	5.6V.DC	100V.DC	105V.DC	.2V.DC	0V.	8.4V.DC	7.0V.DC	
6	117Z6GT	117V.AC	117V.AC	117V.AC	135V.DC	117V.AC	0V.	0V.	135V.DC	

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1N5GT	235KΩ	*	1700Ω	1700Ω	INF.	INF.	*	INF.	1.05MEG.
2	1A7GT	235KΩ	*	1700Ω	70KΩ	168KΩ	24KΩ	*	0Ω	2.5MEG.
3	1N5GT	235KΩ	*	1700Ω	1700Ω	725KΩ	0Ω	*	*	5MEG.
4	1H5GT	235KΩ	*	200KΩ	7.5MEG.	780KΩ	0Ω	*	INF.	7.5MEG.
5	3Q5GT	0Ω	*	2.3KΩ	1700Ω	975KΩ	0Ω	*	*	
6	117Z6GT	232Ω	232Ω	232Ω	2.3KΩ	232Ω	INF.	0Ω	2.3KΩ	

* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

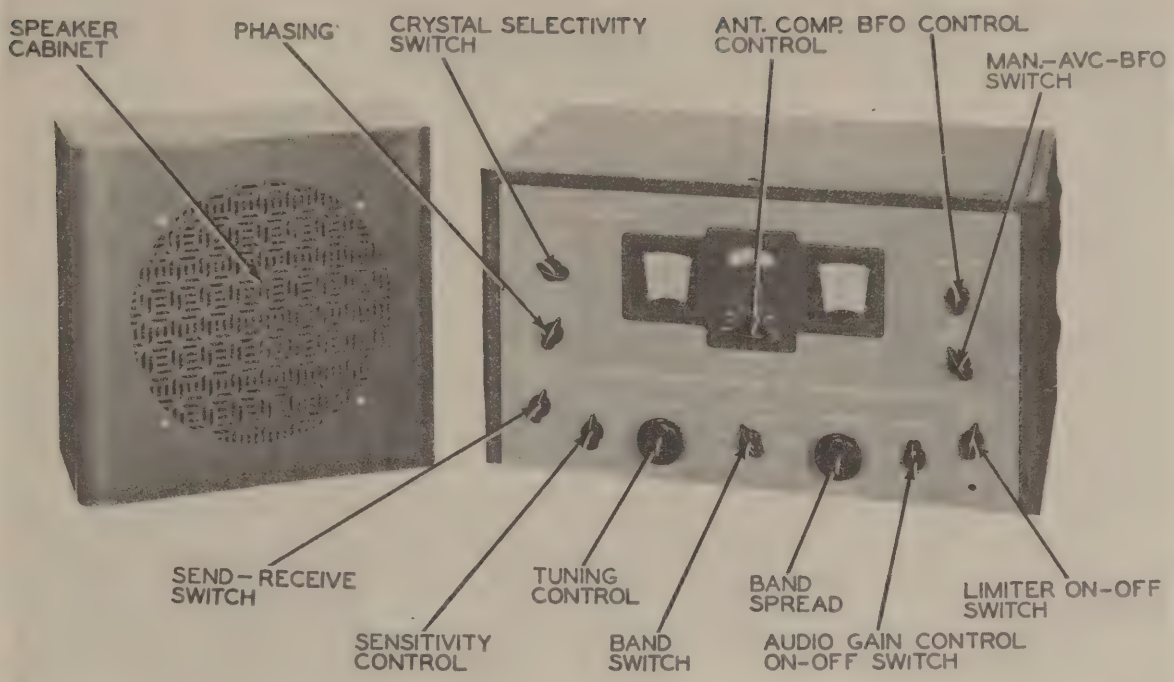
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

468-17

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is grounded.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



HAMMARLUND MODEL HQ-129-X

TRADE NAME	Hammarlund Model HQ-129-X
MANUFACTURER	Hammarlund Mfg. Co., 460 W. 34th Street, New York, N.Y.
TYPE SET	AC Operated 6 Band Superheterodyne Communications Receiver
TUBES (ELEVEN)	Types, 6SS7 RF Amp., 6K8 Converter, 6SS7 1st IF Amp., 6SS7 2nd IF Amp., 6SS7 3rd IF Amp., 6H6 Det.-Noise Limiter, 6SN7GT AF-"S" Meter Tube, 6V6GT Power Output, 6SJ7 BFO, 5U4G Rectifier, 0C3/VR105 Voltage Regulator.
POWER SUPPLY	105-125 Volts AC
RATING	.750 Amps. @ 117V AC
TUNING RANGE	Broadcast - 540-1320KC, 1.32-3.2MC Short Wave- 3.2-5.7MC, 5.7-10MC, 10-18MC, 18-31MC.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: HAMMARLUND PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SS7	6SS7	8N	
2	Converter	6K8	6K8	8K	
3	1st IF Amp.	6SS7	6SS7	8N	
4	2nd IF Amp.	6SS7	6SS7	8N	
5	3rd IF Amp.	6SS7	6SS7	8N	
6	Det.-Noise Lim.	6H6	6H6	7Q	
7	AF-"S" Meter Tube	6SN7GT	6SN7GT	8BD	
8	Power Output	6V6GT	6V6GT	7AC	
9	BFO	6SJ7	6SJ7	8N	
10	Rectifier	5U4G	5U4G	5T	
11	Voltage Reg.	OC3/VR105	OC3/VR105	4AJ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: HAMMARLUND PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
12A	10	450	23840-1	FP424	DY-3x10-450/20-25	EL-431	AF2222J	UP7DJ51	Filter
B	10	450					"		"
C	10	450					"		"
D	20	25					PRS25-10*		Cath. Bypass
13	.05	500	23912-2	TP415	S-6-05	TC-15	684-05	DT6S5	Line Bypass
14	.05	500	23912-2	TP415	S-6-05	TC-15	684-05	DT6S5	" "
15	.05	500	23912-2	TP415	S-6-05	TC-15	684-05	DT6S5	Voice Coil Bypass
16	.05	500	23912-2	TP415	S-6-05	TC-15	684-05	DT6S5	6SJ7 Plate Decoupling
17	.05	500	23912-2	TP415	S-6-05	TC-15	684-05	DT6S5	6SJ7 Screen Bypass
18	.02	500	23912-1	TP412	S-6-02	TC-12	684-02	DT6S2	Audio Coupling
19	.02	500	23912-1	TP412	S-6-02	TC-12	684-02	DT6S2	" "
20	.05	500	23912-2	TP415	S-6-05	TC-15	684-05	DT6S5	Noise Lim. Bias. Bypass
21	.01	200	23912-4	TP421	S-4-01	TC-11	484-01	DT4S1	AVC Filter
22	.02	500	23912-1	TP412	S-6-02	TC-12	684-02	DT6S2	3rd IF Plate Bypass
23	.05	500	23912-2	TP415	S-6-05	TC-15	684-05	DT6S5	Osc. Plate Decoupling
24	.05	500	23912-2	TP415	S-6-05	TC-15	684-05	DT6S5	3rd IF Screen Bypass
25	.1	500	23912-3	TP418	S-6-1	TC-1	684-.1	DT6P1	3rd IF Cath. Bypass
26	.02	500	23912-1	TP412	S-6-02	TC-12	684-02	DT6S2	2nd IF Plate Bypass
27	.02	500	23912-1	TP412	S-6-02	TC-12	684-02	DT6S2	2nd IF Screen Bypass
28	.05	500	23912-2	TP415	S-6-05	TC-15	684-05	DT6S5	2nd IF Supp. Bypass
29	.02	500	23912-1	TP412	S-6-02	TC-12	684-02	DT6S2	AVC Filter
30	.02	500	23912-1	TP412	S-6-02	TC-12	684-02	DT6S2	1st IF Plate Bypass
31	.02	500	23912-1	TP412	S-6-02	TC-12	684-02	DT6S2	1st IF Screen Bypass
32	.02	500	23912-1	TP412	S-6-02	TC-12	684-02	DT6S2	AVC Filter
33	.05	500	23912-2	TP415	S-6-05	TC-15	684-05	DT6S5	1st IF Cath. Bypass
34	.02	500	23912-1	TP412	S-6-02	TC-12	684-02	DT6S2	Conv. Plate Bypass
35	.02	500	23912-1	TP412	S-6-02	TC-12	684-02	DT6S2	Conv. Screen Bypass
36	.05	500	23912-2	TP415	S-6-05	TC-15	684-05	DT6S5	Conv. Cath. Bypass
37	.02	500	23912-1	TP412	S-6-02	TC-12	684-02	DT6S2	RF Screen Bypass
38	.02	500	23912-1	TP412	S-6-02	TC-12	684-02	DT6S2	RF Cath. Bypass
39	.02	500	23912-1	TP412	S-6-02	TC-12	684-02	DT6S2	AVC Filter
40	5	500	23002-1D	MCB205	MOS.5-55	MS-55	1469-00005	5R5V5	BFO Coupling
41	300	500	23001-75D	MC241	MO.5-33	MS-33	1468-0003	5W5T3	6V6 Grid Bypass
42	100	500	23001-48B	MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Diode Filter
43	100	500	23001-48B	MC235	MO.5-31	1FM-31	1468-0001	5W5T1	" "
44	100	500	23001-48D	MC235	MO.5-31	1FM-31	1468-0001	5W5T1	6H6 Diode Plate Bypass
45	673	500	6061						Fixed Padder
46	300	500	23003-105D	MC241	MO.5-33	MS-33	1468-0003	5W5T3	" "
47	1000	500	23015-40B	MC255	MO.3-21	1FM-21	1468-001	1W5D1	" "
48	1500	500	23015-20B	MC256	MW.5-215	1FM-215	1467-0015	1W5D15	" "
49	6	500	23023-34						Fixed Trimmer Cer.
50	5100	500	23015-16B						RF Plate Decoupling
51	620	500	23005-86B						RF Coupling
52	50	500	23002-11D	MCB225	MOS.5-45	MS-45	1469-00005	5R5C5	Osc. Grid Capacitor
53	4700	500	23015-5B						Conv. Cath. Bypass
54	620	500	23005-86B						RF Coupling

*Parallel with one section of AF to obtain bypass section.

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: HAMMARLUND PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
55A	250KΩ	1	15356-1	MR44	D13-130	M-64-Z	Audio Gain Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 55A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
56A	5000Ω	1	15305-4	MR14	D11-114	M-19-S	Sensitivity Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 56A per instructions
57A	270KΩ	1	15357-1	UM149	D11-130	AM-55-S	Meter Adjustment Control
B	Shaft		Not Req.	SS12	E #	KSS-3#	Attach to 57A per instructions

#Split in knurled shaft may be used as screwdriver slot.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: HAMMARLUND PART No.	IRC PART No.	IDENTIFICATION CODES
58	22Ω	½	19302-9	BW-½-22	Red-Red-Blk. Parasitic Suppressor
59	2200Ω	½	19301-40	BTS-2200	Red-Red-Red RF Screen Dropping
60	470KΩ	½	19301-96	BTS-470K	Yl.-Vi.-Yl. AVC Network
61	10KΩ	½	19301-56	BTS-10K	Br.-Blk.-Or. AVC Network
62	47KΩ	½	19301-72	BTS-47K	Yl.-Vi.-Or. Converter Grid
63	22Ω	½	19302-9	BW-½-22	Red-Red-Blk. Parasitic Suppressor
64	240Ω	½	19302-34	BW-½-270	Red-Yl.-Br. Converter Cathode
65	47KΩ	½	19301-72	BTS-47K	Yl.-Vi.-Or. Osc. Grid
66	15Ω	½	19302-5	BW-½-15	Br.-Grn.-Blk. Parasitic Suppressor
67	2200Ω	½	19301-40	BTS-2200	Red-Red-Red Converter Screen Dropping
68	2200Ω	½	19301-40	BTS-2200	Red-Red-Red Converter Plate Filter
69	10KΩ	½	19301-56	BTS-10K	Br.-Blk.-Or. AVC Network
70	680Ω	½	19301-28	BTS-680	Blue-Gray-Br. 1st IF Cathode
71	2200Ω	½	19301-40	BTS-2200	Red-Red-Red 1st IF Screen Dropping
72	2200Ω	½	19301-40	BTS-2200	Red-Red-Red 1st IF Plate Filter
73	2200Ω	½	19301-40	BTS-2200	Red-Red-Red Selectivity Control
74	300Ω	½	19301-196	BW-½-270	Or.-Blk.-Br. Selectivity Control
75	51Ω	½	19301-187	BW-½-47	Grn.-Br.-Blk. Selectivity Control
76	22Ω	½	19302-9	BW-½-22	Red-Red-Blk. Selectivity Control
77	10KΩ	½	19301-56	BTS-10K	Br.-Blk.-Or. AVC Network
78	300Ω	½	19301-196	BW-½-270	Or.-Blk.-Br. Bias
79	390Ω	½	19301-22	BW-½-390	Or.-White-Br. 2nd IF Cathode
80	2200Ω	½	19301-40	BTS-2200	Red-Red-Red 2nd IF Screen Dropping
81	2200Ω	½	19301-40	BTS-2200	Red-Red-Red 2nd IF Plate Filter
82	300Ω	½	19301-196	BW-½-270	Or.-Blk.-Br. 3rd. IF Cathode
83	47KΩ	1	19303-61	BTA-47K	Yl.-Vi.-Or. 3rd. IF Screen Dropping
84	2200Ω	½	19301-40	BTS-2200	Red-Red-Red 3rd IF Plate Filter
85	62KΩ	1	19310-231	BTA-68K	Blue-Red-Or. Sensitivity Limit
86	100Ω	½	19301-8	BW-½-100	Br.-Blk.-Br. Sensitivity Limit
87	47KΩ	½	19301-72	BTS-47K	Yl.-Vi.-Or. IF Filter
88	270KΩ	½	19301-90	BTS-270K	Red-Vi.-Yl. Limiter Plate Load
89	1 Meg.	½	19301-104	BTS-1 Meg.	Br.-Blk.-Grn. Limiter RF Blocking
90	820KΩ	½	19301-102	BTS-820K	Blue-Red-Yl. Limiter Cathode
91	2 Meg.	½	19301-169	BTS-2.2 Meg.	Red-Blk.-Grn. AVC Network
92	1000Ω	½	19301-32	BTS-1000	Br.-Blk.-Red 1st AF Cathode
93	470KΩ	½	19301-96	BTS-470K	Yl.-Vi.-Yl. Meter Bridge
94	470KΩ	½	19301-96	BTS-470K	Yl.-Vi.-Yl. Meter Bridge
95	470KΩ	½	19301-96	BTS-470K	Yl.-Vi.-Yl. Meter Bridge
96	24KΩ	½	19301-213	BTS-22K	Red-Yl.-Or. Meter Bridge
97	24KΩ	1	19301-187	BTA-22K	Red-Yl.-Or. 1st AF Plate Load
98	200KΩ	½	19301-220	BTS-220K	Red-Blk.-Yl. Output Grid
99	390Ω	1	19305-38	BTA-390	Or.-White-Br. Output Cathode
100	27Ω	1	19305-11	BW-1-27	Red-Vi.-Blk. Output Transformer Shunt
101	10KΩ	½	19301-56	BTS-10K	Br.-Blk.-Or. BFO Decoupling
102	100KΩ	½	19301-80	BTS-100K	Br.-Blk.-Yl. BFO Screen Dropping
103	100KΩ	½	19301-80	BTS-100K	Br.-Blk.-Yl. BFO Plate Load
104	2200Ω	½	19301-40	BTS-2200	Red-Red-Red Osc. Plate Decoupling
105	10Ω	½	19302-1	BW-½-10	Br.-Blk.-Blk. Unused Osc. Coil Shunt
106	4000Ω	5	19360-47	AB-4000	Filter
107	2200Ω	½	19301-40	BTS-2200	Red-Red-Red RF Plate Decoupling

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA			INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D.C. RESISTANCE	INDUCTANCE (0 CURRENT 1000)	HAMMARLUND PART NO.	STANCOR PART NO.	THORDARSON PART NO.	
108	.097A	270Ω	16 Henries	6083	C-1001†	T-20C53†	†Mount vertically beneath chassis.
109	.055A	900Ω	35 Henries	6084	C-1708	T-20C52‡	‡Drill two new mounting holes

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			INSTALLATION NOTES
	PRI.	SEC. 1	SEC. 2	SEC. 3	HAMMARLUND PART No.	STANCOR PART No.	THORDASON PART No.	
110	117VAC @ .750A	600VCT @ .097A	5.2VAC @ 2.9A	6.5VAC @ 3.0A	26012	P-6313§	T-22R04§	§Use universal mounting brackets.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		HAMMARLUND PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
111	8500Ω	7Ω	310Ω	.75Ω	6086	A-3890	T-22S87		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			HAMMARLUND PART No.	JENSEN PART No.		
112	FIELD	VC IMP.		ST-121 Mod. P10-R		
	PM	7Ω				
	CONE DIA.	VC DIA.				
113	9-3/8"	15/16"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	HAMMARLUND PART No.	MEISSNER PART No.	
114	5.4-1.32MC Ant.	2Ω	5Ω	26051-G1		
115	1.32-3.2MC Ant.	9Ω	1.5Ω	26051-G2		
116	3.2-5.7MC Ant.	.2Ω	.5Ω	6013		
117	5.7-10MC Ant.	0Ω	.1Ω	6016	14-1044	
118	10-18 MC Ant.	.1Ω	0Ω	6019	14-1046	
119	18-31 MC Ant.	0Ω	0Ω	6022		
120	RF Choke	30Ω		6161		
121	RF Choke	0Ω		26054-1		
122	.54-1.32MC RF	5Ω		26047-G2		
123	1.32-3.2MC RF	2Ω		26047-G1		
124	3.2-5.7MC RF	.5Ω		26047-G6		
125	5.7-10MC RF	.1Ω		26047-G5		
126	10-18MC RF	0Ω		26047-G4		
127	18-31MC RF	.1Ω		26047-G3		
128	.54-1.32MC RF	.2Ω	4Ω	26030-G2		

PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	HAMMARLUND PART No.	MEISSNER PART No.	
129	1.32-3.2MC Osc.	.1Ω	1.5Ω	26030-G1		
130	3.2-5.7MC Osc.	.1Ω	.5Ω	26030-G2		
131	5.7-10MC Osc.	.1Ω	.1Ω	26030-G5		
132	10-18MC Osc.	.1Ω	.1Ω	26030-G4		
133	18-31MC Osc.	.1Ω	.1Ω	26030-G3		
134	1st IF	4.5Ω		6335		
135	2nd IF Output	5.5Ω	1Ω	SA785		Items 135, 136 are included in crystal filter assembly SA785
136	2nd IF Grid Coil		7Ω	SA785		
137	3rd IF	4.5Ω		6335		
138	4th Output IF	6Ω		SA797		
139	Diode Input IF		6.5Ω	SA799		
140	BFO Osc.			26021-G1		

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					HAMMARLUND PART No.		
141	Bayonet	6-8	0.15	Brown	16004		Type 47
142	Bayonet	6-8	0.15	Brown	16004		Type 47
143	Bayonet	6-8	0.15	Brown	16004		Type 47

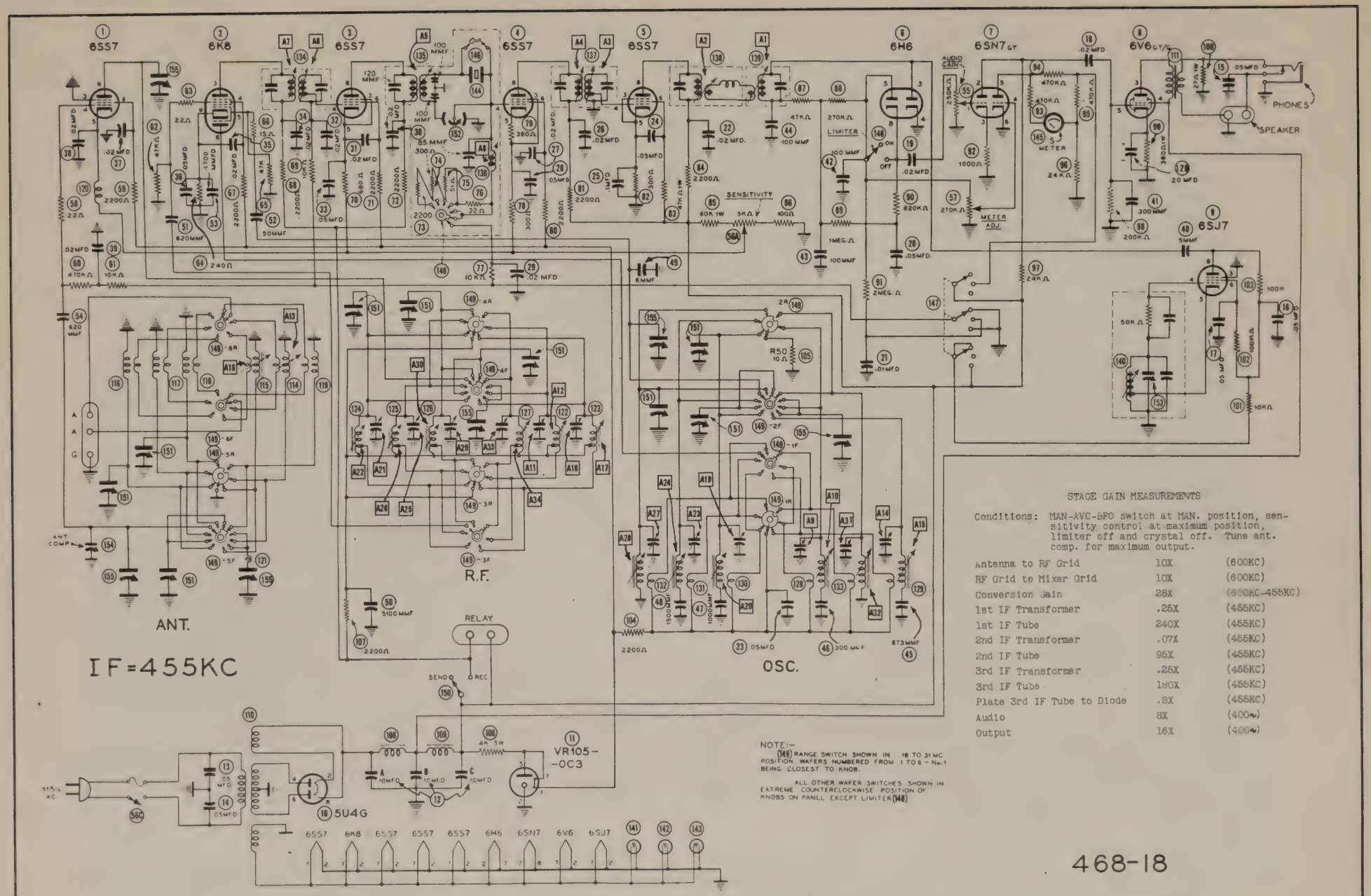
MISCELLANEOUS

ITEM No.	PART NAME	HAMMARLUND PART No.	NOTES
144	Crystal	6338	Quartz
145	"S" Meter	4903	
146	Crystal Switch		
147	Switch	6097	Manual AVC-BFO
148	Limiter Switch	6333	
149	Band Switch	Assembly	
	A-H.F.Osc.Plate	6331	
	B-H.F. Osc.Grid	6332	
	C-Det.Grid Tap	6064	
	D-RF Plate	6063	
	E-RF Grid	6063	
	F-Antenna	6062	
150	Switch	6333	Send-Receive
151	Band Spread		(Part of SA-610)
152	Tuning Cap.	SA-604	Crystal Phasing
153	Tuning Cap.	SA-681	(Part of BFO Assby. 26021-G1)
154	Tuning Cap.	SA-617	(Part of SA-610
155	Tuning Cap.		" " "
	Trimmer Cap.	6189-G2	A19,A21,A27,A29
	Trimmer Cap.	6055-G1	A9,A11,A14,A16,A23,A25,A31,A33

ALIGNMENT INSTRUCTIONS

A cathode-ray oscilloscope and a frequency-modulated signal generator are required for proper alignment. Sychronize the scope externally with the signal generator. Set Send-Receive switch to Receive, the Limiter "off", the MAN-AVC-BFO switch to MAN. position and the crystal selectivity switch to "off" position. Set band spread dial at 200, gain and sensitivity controls at maximum and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
.1 MFD.	High side to pin #4 (grid) of the third IF tube (5) Low side to chassis.	455KC	.54-1.32 MC	.54MC	High side to pin 5 of 6H6. Low side to chassis	A1,A2,	Adjust for maximum amplitude, symmetry and pattern coincidence on the scope.
"	High side to pin #4 (grid) of the second IF tube (4). Low side to chassis.	"	"	"	"	A3,A4	Adjust to obtain symmetrical, coinciding curve with as much amplitude as possible without disturbing the pattern.
"	High side to pin #4 (grid) of the first IF tube (3) Low side to chassis.	"	"	"	"	A5	Adjust for maximum amplitude at center of curve.
"	High side to grid cap of 6K8. Low side to chassis.	"	"	"	"	A6,A7.	Adjust to obtain symmetrical coinciding curve with as much amplitude as possible without disturbing the pattern. This should result in a tall selectivity curve with a slightly flattened peak. Pin 5 (osc grid) should be grounded to obtain clearer pattern.
"	"	"	"	"	"	A8	Turn crystal selectivity switch to position #1, set crystal phasing pointer on arrow. Keep input signal low to prevent overloading. Adjust A8 for maximum amplitude and symmetry.
twitch crystal selectivity to position #2 and adjust phasing control slightly from the arrow position, if necessary, to obtain identical images. Adjust the signal generator frequency to obtain coincidence of the images, and if complete coincidence is not obtained, alternately make slight adjustments of the phasing control and the signal generator frequency, until images coincide. These last steps have determined the exact frequency of the quartz crystal and the frequency setting of the signal generator should be left undisturbed. with signal generator at this setting turn crystal "off" and repeat carefully the complete IF alignment procedure. The BFO may be adjusted if necessary by adjusting A35 for zero beat with beat oscillator setting at zero.							
The following adjustments should not be made unless it is positive that readjustment is necessary.							
200 MMF.	High side to ext. ant. Low side to chassis.	1.25MC	.54-1.32 MC	1.25MC	Connect output meter across voice coil.	A9	Adjust for maximum output.
"	"	.6MC	"	.6MC	"	A10	Adjust for maximum output. Repeat last two steps until no further increase is obtained.
"	"	1.25MC	"	1.25MC	"	A11	Adjust for maximum output.
"	"	.6MC	"	.6MC	"	A12	Adjust for maximum output. Repeat last two steps until no further increase is obtained.
"	"	.6MC	"	.6MC	"	A13	Adjust for maximum output.
400 ohms	"	3.0MC	1.32-3.2 MC	3.0MC	"	A14	" " " "
"	"	1.4MC	"	1.4MC	"	A15	Adjust for maximum output. Repeat last two steps until no further increase is obtained.
"	"	3.0MC	"	3.0MC	"	A16	Adjust for maximum output.
"	"	1.4MC	"	1.4MC	"	A17	Adjust for maximum output. Repeat last two steps until no further increase is obtained.
"	"	1.4MC	"	1.4MC	"	A18	Adjust for maximum output.
"	"	5.5MC	3.2-5.7 MC	5.5MC	"	A19	" " " "
"	"	3.5MC	"	3.5MC	"	A20	Adjust for maximum output. Repeat last two steps until no further increase is obtained.
"	"	5.5MC	"	5.5MC	"	A21	Adjust for maximum output.
"	"	3.5MC	"	3.5MC	"	A22	Adjust for maximum output. Repeat last two steps until no further increase is obtained.
"	"	10.0MC	5.7-10.0 MC	10.0MC	"	A23	Adjust for maximum output.
"	"	6.0MC	"	6.0MC	"	A24	Adjust for maximum output. Repeat last two steps until no further increase is obtained.
"	"	10.0MC	"	10.0MC	"	A25	Adjust for maximum output.
"	"	6.0MC	"	6.0MC	"	A26	Adjust for maximum output. Repeat last two steps until no further increase is obtained.
" "	"	18.0MC	10.0-18.0 MC	18.0MC	"	A27	Adjust for maximum output
"	"	10.0MC	"	10.0MC	"	A28	Adjust for maximum output Repeat last two steps until no further increase is obtained.
"	"	18.0MC	"	18.0MC	"	A29	Adjust for maximum output
"	"	10.0MC	"	10.0MC	"	A30	Adjust for maximum output Repeat last two steps until no further increase is obtained.
"	"	30.0MC	18.0-31.0 MC	30.0MC	"	A31	Adjust for maximum output
"	"	18.0MC	"	18.0MC	"	A32	Adjust for maximum output Repeat last two steps until no further increase is obtained.
"	"	30.0MC	"	30.0MC	"	A33	Rock tuning capacitor and output for maximum output
"	"	18.0MC	"	18.0MC	"	A34	Adjust for maximum output Repeat last two steps until no further increase is obtained.



NOTE:-
(149) RANGE SWITCH SHOWN IN 18 TO 31 MC POSITION. WAFERS NUMBERED FROM 1 TO 6 - No.1 BEING CLOSEST TO KNOB.

ALL OTHER WAFER SWITCHES SHOWN IN EXTREME COUNTERCLOCKWISE POSITION OF KNOBS ON PANEL EXCEPT LIMITER (148)

STAGE GAIN MEASUREMENTS

Conditions: MAN-AVC-BFO switch at MAN. position, sensitivity control at maximum position, limiter off and crystal off. Tune ant. comp. for maximum output.

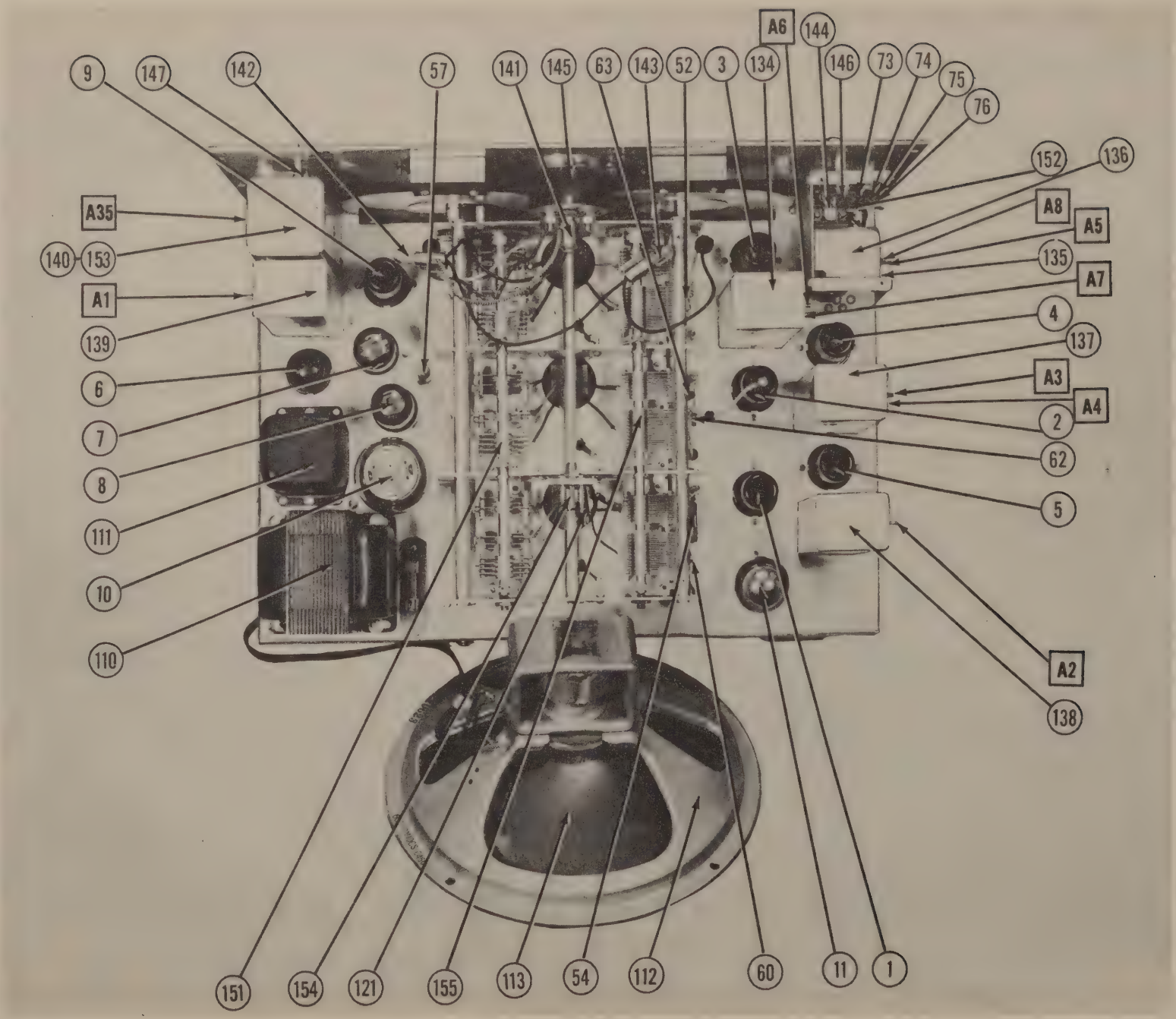
Antenna to RF Grid	10X	(600KC)
RF Grid to Mixer Grid	10X	(600KC)
Conversion Gain	28X	(600KC-455KC)
1st IF Transformer	.25X	(455KC)
1st IF Tube	240X	(455KC)
2nd IF Transformer	.07X	(455KC)
2nd IF Tube	95X	(455KC)
3rd IF Transformer	.25X	(455KC)
3rd IF Tube	180X	(455KC)
Plate 3rd IF Tube to Diode	.8X	(455KC)
Audio	8X	(400~)
Output	16X	(400~)

468-18

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW

NOTE.

1. VOLTAGE AND RESISTANCE READINGS TAKEN WITH AUDIO GAIN AND SENSITIVITY CONTROLS AT MAXIMUM LIMITER AND CRYSTAL SWITCHES OFF.
2. READINGS ON 6SJ7 TAKEN WITH SWITCH IN BFO POSITION.
3. READINGS ON 6SN7GT TAKEN SWITCH IN AVC POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	6SS7	0V.	0V.	0V.	0V.	3.2V.DC	107V.DC	6.35VAC	182V.DC	
2	6K8	0V.	0V.	200V.DC	97V.DC	0V.	103V.DC	6.35VAC	3.4V.DC	0V
3	6SS7	0V.	0V.	6.8V.DC	0V.	6.8V.DC	110V.DC	6.35VAC	195V.DC	
4	6SS7	0V.	0V.	4.6V.DC	0V.	6.8V.DC	110V.DC	6.35VAC	195V.DC	
5	6SS7	0V.	0V.	3.7V.DC	0V.	3.7V.DC	113V.DC	6.35VAC	184V.DC	
6	6H6	0V.	6.35VAC	-2V.DC	0V.	-3V.DC	-05V.DC	0V.	-3V.DC	
7	6SN7GT	0V.	120V.DC	3.8V.DC	-4V.DC	12V.DC	0V.	6.35VAC	0V.	
8	6V6GT	0V.	0V.	275V.DC	275V.DC	0V.	204V.DC	6.35VAC	15V.DC	
9	6SJ7	0V.	0V.	0V.	-7.8V.DC	0V.	72V.DC	6.35VAC	32V.DC	
10	5U4G	204V.DC	310V.DC	204V.DC	295V.AC	0V.	295V.AC	204V.DC	310V.DC	
11	0C3/VR105	97V.DC	0V.	112V.DC	112V.DC	112V.DC	28V.DC	112V.DC	112V.DC	

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	6SS7	0Ω	0Ω	0Ω	2.6MEG.	125Ω	64KΩ	.25Ω	64KΩ	
2	6K8	0Ω	0Ω	60KΩ	64KΩ	45KΩ	64KΩ	.25Ω	220Ω	46KΩ
3	6SS7	0Ω	0Ω	750Ω	2.1MEG.	750Ω	64KΩ	.25Ω	60KΩ	
4	6SS7	0Ω	0Ω	390Ω	2.1MEG.	740Ω	64KΩ	.25Ω	60KΩ	
5	6SS7	0Ω	0Ω	300Ω	1Ω	300Ω	105KΩ	.25Ω	60KΩ	
6	6H6	0Ω	.25Ω	510KΩ	0Ω	230KΩ	23KΩ	0Ω	230KΩ	
7	6SN7GT	275KΩ	82KΩ	1KΩ	115KΩ	265KΩ	0Ω	.25Ω	0Ω	
8	6V6GT	0Ω	0Ω	58KΩ	58KΩ	200KΩ	58KΩ	.25Ω	360Ω	
9	6SJ7	0Ω	0Ω	0Ω	47KΩ	.75Ω	168KΩ	.25Ω	168KΩ	
10	5U4G	58KΩ	58KΩ	58KΩ	50Ω	INF.	47Ω	58KΩ	58KΩ	
11	0C3/VR105	64KΩ	0Ω	62KΩ	62KΩ	62KΩ	90Ω	62KΩ	62KΩ	

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

MODEL 8S 473

MODEL 8S452

MAJESTIC
MODELS 8S452, 8S473

MAJESTIC
MODELS 8S452, 8S473

TRADE NAME	Majestic Models 8S452, 8S473 (Chassis 4810)		
MANUFACTURER	Majestic Radio & Television Corp., St. Charles, Ill.		
TYPE SET	AC Operated Combination Automatic Phono. - 2 Band Superheterodyne Receiver, Self Contained Loop Antenna		
TUBES (EIGHT)	Types, 6SA7GT Converter-Osc., 6SK7GT IF Amp., 6SQ7GT Det.-AF, 6J5 Phase Inverter, 2-6K6GT Power Output, 5Y3GT Rectifier, VR105-30 Voltage Regulator		
POWER SUPPLY	117 Volts AC	RATING	.730 Amps. @ 117V AC
TUNING RANGE--BROADCAST	540-1650KC	SHORT WAVE	5.8-18.5MC

ALIGNMENT INSTRUCTIONS

To set pointer turn variable fully closed and set pointer at the last reference mark at the left end of the dial. Set volume control at maximum volume and keep output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.01 MFD	High side to pin #8 of 6SA7. Low side to chassis.	455KC	BC	Any quiet point.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output
	Loop	1500KC	"	150	"	A5,A6	Connect output of signal generator to a loop of two or three turns of wire approx. 12" in diameter. Place parallel to and about one foot from receiver loop. Adjust for maximum output in order given.
	"	600KC	"	Tune for maximum output.	"	A7	Rock variable and adjust for maximum output. Recheck A5 and A6 at 1500KC
400 ohms	High side to ext. ant. post. Low side to chassis.	17.0MC	SW	17	"	A8	Adjust for maximum output
400 ohms	"	"	"	Tune for maximum output.	"	A9	Rock variable and adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		MAJESTIC PART No.	STANDARD REPLACEMENT		
1	Converter Osc.	6SA7GT	6SA7GT	6AD	
2	IF Amp.	6SK7GT	6SK7GT	6N	
3	Det.-AF	6SQ7GT	6SQ7GT	6Q	
4	Phase Inverter	6J5	6J5	6Q	
5	Power Output	6K6GT	6K6GT	7S	
6	Power Output	6K6GT	6K6GT	7S	
7	Rectifier	5Y3GT	5Y3GT	5T	
8	Voltage Reg.	VR105-30	VR105-30	4AJ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	MAJESTIC PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
9A	16	450	19-16	2S569	DHS-2x16-450	TU-1616	PRV450-16-16	EZ5116	Filter- Red
B	16	450							" - Blue
10	.01	400	6-132	TP421	S-4-01	TC-11	484-01	DT4S1	Line Bypass *
11	.001	600	5-79	TP404	S-6-001	TC-21	684-001	DT6D1	6K6 Plate Bypass
12	.001	600	5-79	TP404	S-6-001	TC-21	684-001	DT6D1	" " "
13	.01	400	6-132	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
14	.01	400	6-132	TP421	S-4-01	TC-11	484-01	DT4S1	" "
15	.05	200	5-40	TP426	S-4-05	TC-15	484-05	DT4S5	6J5 Bias Filter
16	.01	400	6-132	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
17	.006	400	6-133	TP409	S-6-006	TC-26	484-006	DT6D6	Tone Compensation
18	.01	200	5-57	TP421	S-4-01	TC-11	484-01	DT4S1	" "
19	.006	400	6-133	TP409	S-6-006	TC-26	484-006	DT6D6	Audio Coupling
20	.01	400	6-132	TP421	S-4-01	TC-11	484-01	DT4S1	" "
21	.1	200	5-39	TP428	S-4-1	TC-1	484-.1	DT4P1	IF Cath. Bypass
22	.05	600	5-77	TP415	S-4-05	TC-15	684-05	DT6S5	IF Screen Bypass
23	.05	600	5-77	TP415	S-6-05	TC-15	684-05	DT6S5	Conv. Plate Bypass
24	.01	600	5-74	TP410	S-6-01	TC-11	684-01	DT6S1	Conv. Screen Bypass
25	.1	200	5-39	TP428	S-4-1	TC-1	484-.1	DT4P1	AVC Filter
26	.001	600	5-79	TP404	S-6-001	TC-21	684-001	DT6D1	6K6 Plate Bypass
27	220	500	6-151	MC237	M0.5-32	1FM-32	1468-0002	5W5T2	Audio Plate Bypass
28	100	500	6-232	MC235	M0.5-31	1FM-31	1468-0001	5W5T1	IF Coupling
29	47	500	6-159	MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor Cer.
30	6900	500	6-177						Fixed Padder
31	50	500		MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Loop Pri. Shunt
70	15	500							Fixed Trimmer Cer.*

*Not used in all models.

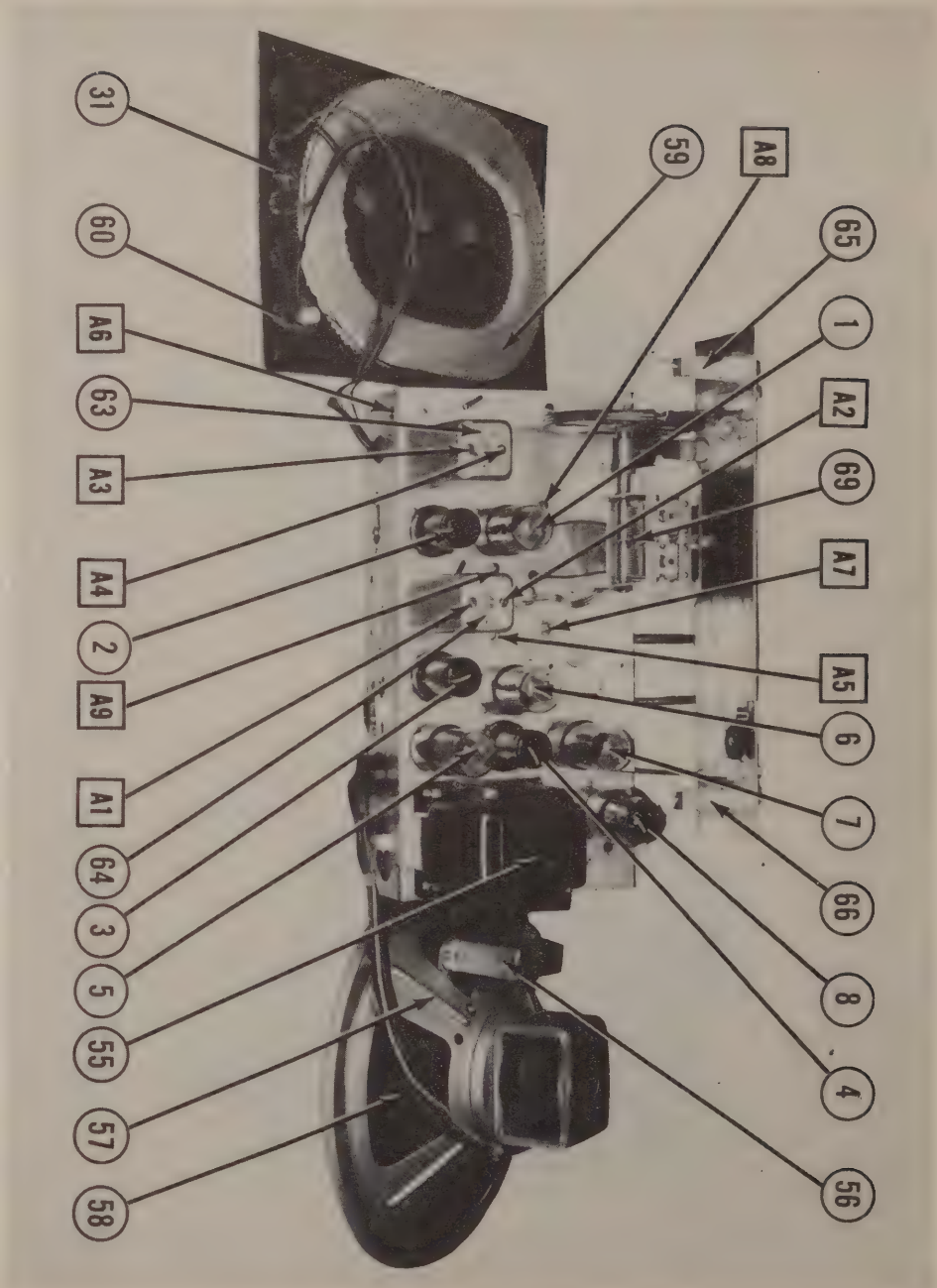
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	MAJESTIC PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
32A	2 Meg.	1	13-15	TM249	D13-139X		Volume Control
B	Shaft		Not Req.	SS25	E		Attach to 32A per instructions
C	Switch		" "	M26	41		" " " " "
33	2 Meg.	1	14-4				Tone Control

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	MAJESTIC PART No.	IRC PART No.	
34	22KΩ	¼	9-222	BTS-22K	Red-Red-Or. Osc. Grid
35	22KΩ	1	9-186	BTS-22K	Red-Red-Or. Converter Screen Dropping
36	15KΩ	2	9-299	BT-2-15K	Br.-Grn.-Or. Converter Screen Dropping
37	10KΩ	½	9-17	BTS-10K	Br.-Blk.-Or. Converter Plate Filter
38	1 Meg.	¼	9-255	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
39	1 Meg.	¼	9-255	BTS-1 Meg.	Br.-Blk.-Grn. Diode Load
40	180Ω	½	9-272	BW-½-180	Br.-Gray-Br. IF Cathode

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	PART No.	IRC PART No.	
41	56K Ω	½	9-177	BTS-56K	Grn.-Blue-Or. IF Screen
42	10 Meg.	½	9-213	BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
					1st AF Plate Load

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	PART No.	STANCOR PART No.	THORDARSON PART No.	

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES		PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI	SEC	PRI	SEC					

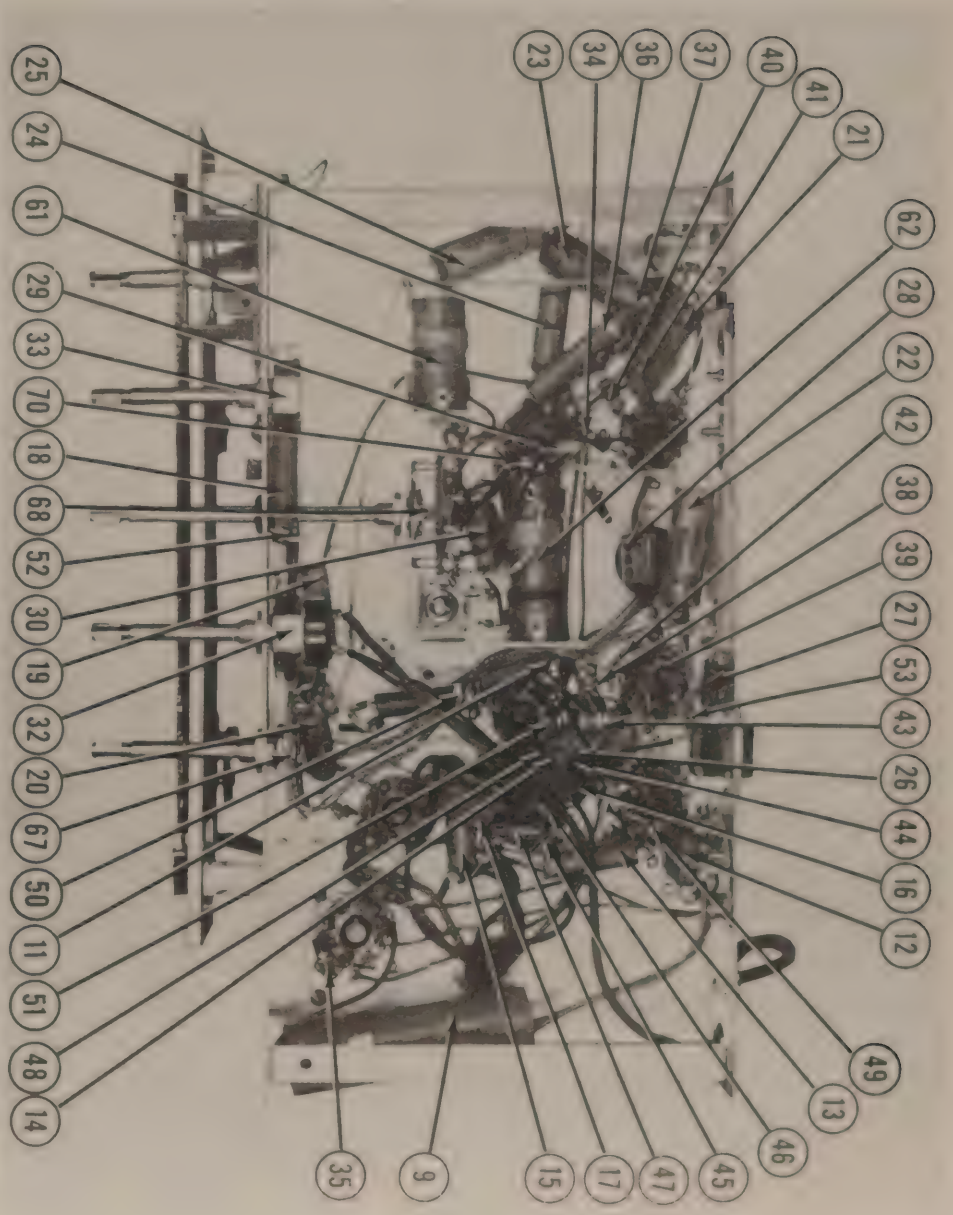
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			PART No.	JENSEN PART No.		

R F COILS

ITEM No.	USE	DC RES		REPLACEMENT DATA		INSTALLATION NOTES
		PRI	SEC	PART No.	MEISSNER PART No.	

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	PART No.	PART No.	

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	PART No.	STANCOR PART No.	THORDARSON PART No.	

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MAGNETIC	STANCOR	THORDARSN		
	PRI.	SEC.	PRI.	SEC.	PART No.	PART No.	PART No.		

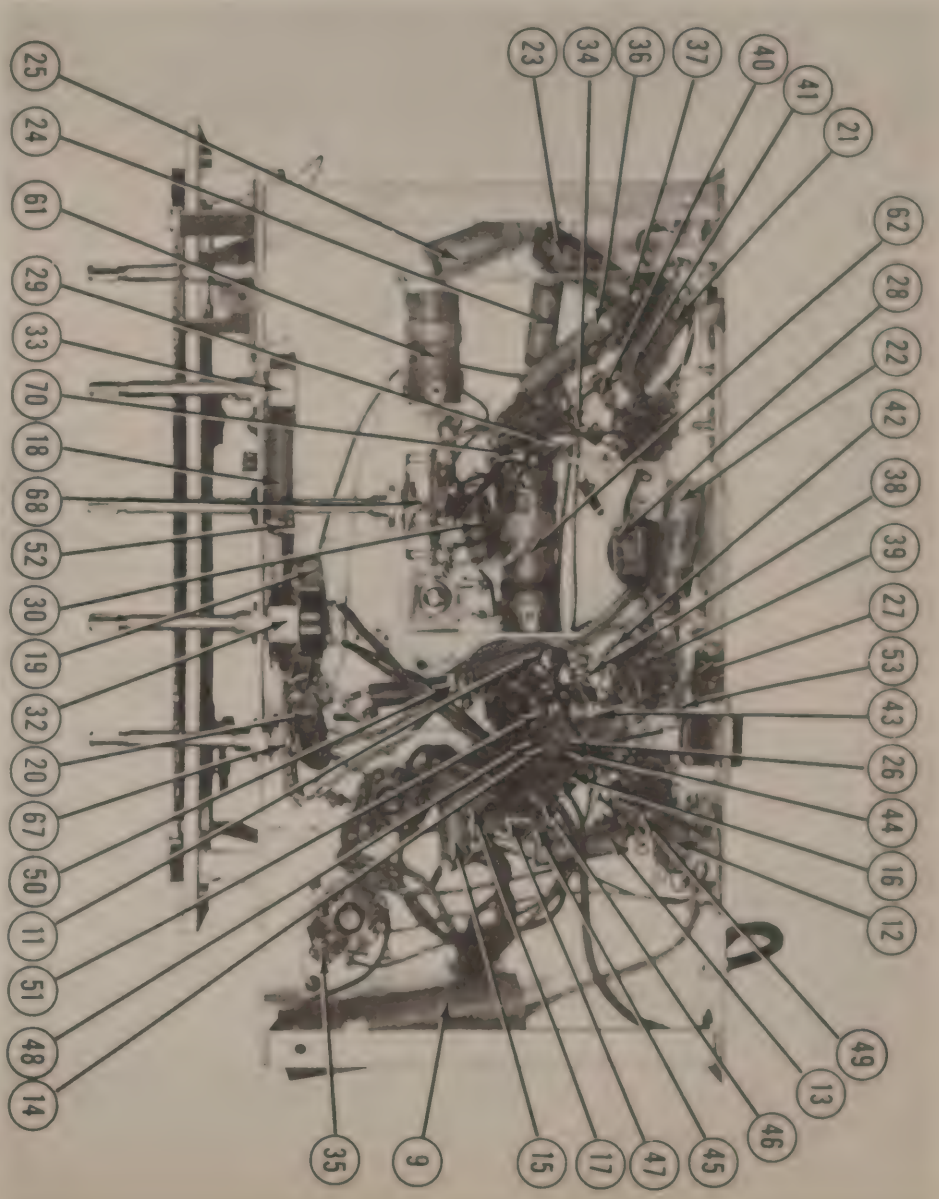
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			PART No.	JENSEN PART No.		

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	PART No.	MEISSNER PART No.	
						Items 62A & 62B wound on same
					16-6682	
					16-6684	†Add 47OK resistor in series with 47K t

CHASSIS—BOTTOM VIEW



MANTOLA MODEL R655-W

TRADE NAME	Mantola Model R655-W (Ch. No. 501APH)
SUPPLIER	The B. F. Goodrich Co., 500 South Main St., Akron, Ohio
TYPE SET	AC Operated Combination Automatic Phono.-Superheterodyne Receiver, Self Contained Loop Antenna
TUBES (FIVE)	Types, 12SA7 Converter, 12SK7 IF Amp., 12SQ7GT Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	110-120 Volts AC
TUNING RANGE—BROADCAST	540-1630KC RATING .230 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer as shown in dial string sketch. Use isolation trans. if available. If not, connect capacitor in series with the low side of the signal generator and B-. Volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
250 MMF.	High side to stator of rear section of variable. Low side to B-.	455KC	High freq.end (Variable fully open)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
250 MMF.	"	1630KC	"	"	A5	" " " "
	Loop	1400KC	Tune for maximum output.	"	A6	Install receiver and loop in cabinet. Connect output of signal generator to two turns of wire and radiate signal into receiver loop. Adjust A6 for maximum output. A6 may be reached by lifting up the top cover and removing the plug button which is directly over the trimmer.

DISASSEMBLY INSTRUCTIONS

1. Remove the following push-on type control knobs: Volume, tuning, and radio-phono-motor.
2. Remove the lock clip on the radio-motor-phono control shaft.
3. Remove screw and bracket connection holding black leads from chassis to loop antenna.
4. Disconnect phono-motor plug.
5. Remove two long screws and wood spacers holding antenna loop to cabinet. Remove antenna loop.
6. Remove four Phillips head screws and washers from chassis board. Remove chassis from cabinet.
7. Remove four hex screws, spacers, and lock washers from chassis board. Remove chassis.
8. Unsolder phono-pickup lead from terminal strip on chassis.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: MANTOLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12SA7	12SA7	8R	
2	IF Amp.	12SK7	12SK7	8N	
3	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MANTOLA PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	30	150	67A8	TN129	DSB-40+30+20-150	EL-340	PRSA150-40-40	EZ42215	Filter - Red
B	30	150							" - Yellow
C	20	150					PRS150-20		" - Blue
6A	30	150	67A3	2N520	M-50+30-150	TA-530	PRSA150-40-40	BRL3515	" *
C	50	150							"
7	.05	400	64B1-22	TP426	S-4-05	TC-15	484-05	DT4S5	Line Filter
8	.05	400	64B1-22	TP426	S-4-05	TC-15	484-05	DT4S5	Phono Coupling
9	.1	400	64B1-20	TP428	S-4-1	TC-1	484-.1	DT4P1	Line Isolating
10	.02	400	64B1-24	TP423	S-4-02	TC-12	484-02	DT4S2	50L6 Plate Bypass
11	.01	400	65A3-10	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
12	.01	400	65A3-10	TP421	S-4-01	TC-11	484-01	DT4S1	" "
13	.01	400	65A3-10	TP421	S-4-01	TC-11	484-01	DT4S1	Tone Compensation
14	.01	400	65A3-10	TP421	S-4-01	TC-11	484-01	DT4S1	" "
15	.02	400	64B1-24	TP423	S-4-02	TC-12	484-02	DT4S2	Osc. Tuned Circuit
16	.1	200	64B1-30	TP428	S-4-1	TC-1	484-.1	DT4P1	AVC Filter
17	.005	600	64B1-12	TP408	S-6-005	TC-25	684-005	DT6D2	Ant. Coupling
18	500	500	65B7-27	MC245	Mo.5-35	1FM-35	1468-0005	5W5T5	Audio Plate Bypass
19	250	500	65B7-22	MC240	Mo.5-325	1FM-325	1468-00025	5W5T25	IF Bypass Diode
20	50	500	65B7-11	MC225	Mo.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor
21	15	500	65B5-3			MS415			Fixed Trimmer

*Used in early productions

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MANTOLA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
22A	500KΩ	1	75B3-2	DTM283	D18-133XX	AT92	Volume Control
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 22A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

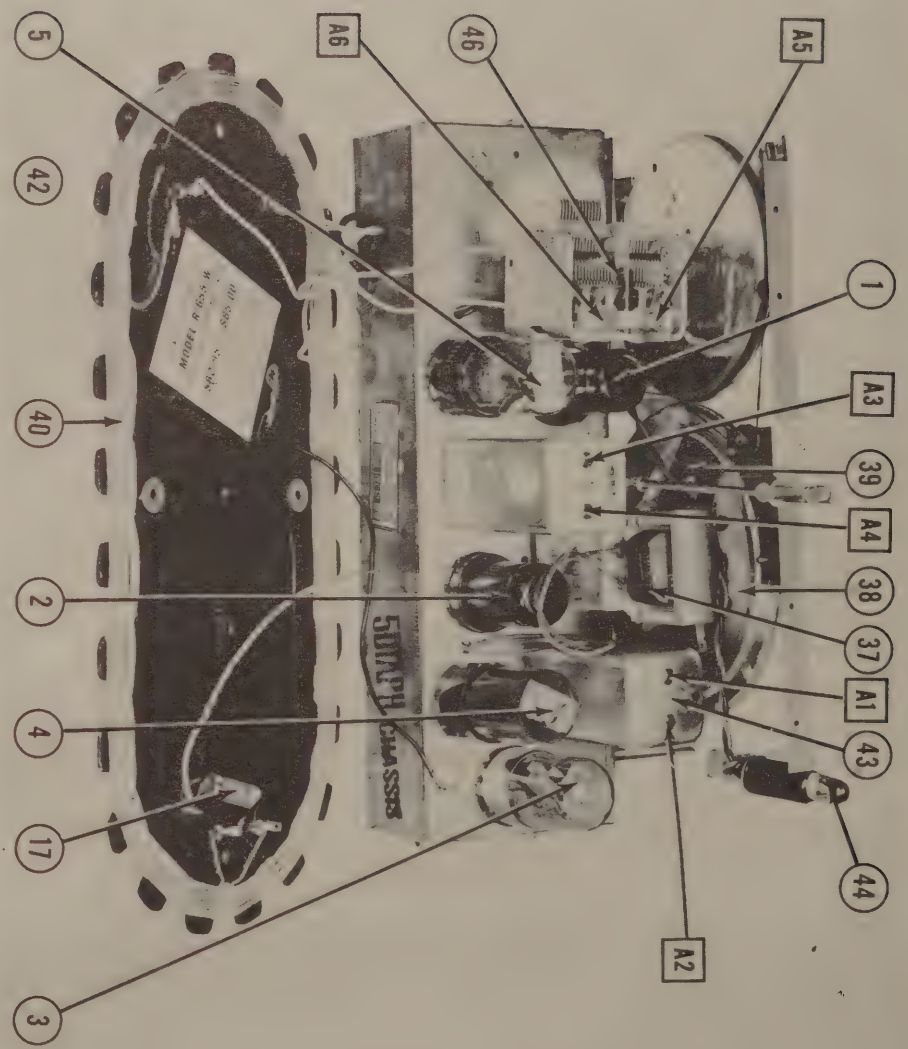
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MANTOLA PART No.	IRC PART No.	IDENTIFICATION CODES
23	22KΩ	½	60B8-223	BTS-22K	Red-Red-Or. Oscillator Grid
24	10 Meg.	½	60B8-106	BTS-10 Meg.	Br.-Blk.-Blue AVC Network
25	1 Meg.	½	60B8-105	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
26	47KΩ	½	60B8-473	BTS-47KΩ	Yl.-Vi.-Or. Tone Compensation
27	27KΩ	½	60B8-273	BTS-27KΩ	Red-Vi.-Or. Tone Compensation
28	10 Meg.	½	60B8-106	BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
29	220KΩ	½	60B8-224	BTS-220K	Red-Red-Yl. 1st AF Plate Load
30	470KΩ	½	60B8-474	BTS-470K	Yl.-Vi.-Yl. Output Grid
31	150Ω	½	60B8-151	BW-½-150	Br.-Grn.-Br. Output Cathode
32	150KΩ	½	60B8-154	BTS-150K	Br.-Grn.-Yl. Line Isolating
33	150Ω	1	60B28-1	BW-1-150	Br.-Grn.-Br. Filter - See Note 1
34	1000Ω	1	60B28-2	BTS-1000	Br.-Blk.-Red Filter
35	33Ω	1	60B28-3	BW-1-33	Or.-Or.-Blk. Filter

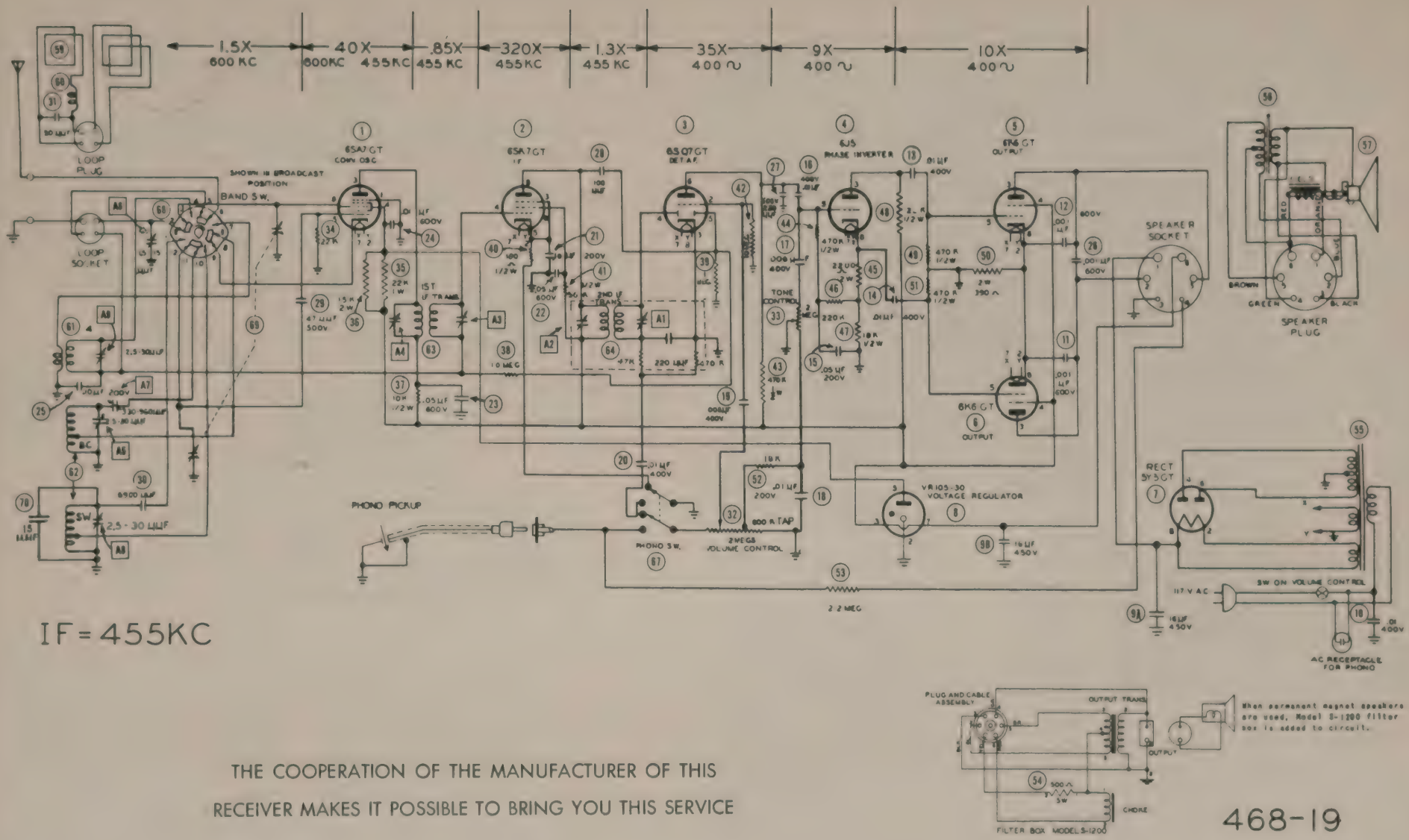
Note 1 - Not used in all models

FILTER CHOKE

ITEM NO.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000~)	REPLACEMENT DATA: MANTOLA PART NO.	REPLACEMENT DATA: STANCOR PART NO.	REPLACEMENT DATA: THORDARSON PART NO.	INSTALLATION NOTES
36	.067A	320Ω	3.6 Henries	74A1‡	C-1711	T-14C63	‡Not used in all models

CHASSIS—TOP VIEW





THE COOPERATION OF THE MANUFACTURER OF THIS

RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

468-19

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN "STANDARD BROADCAST POSITION."

VOLTAGE READINGS

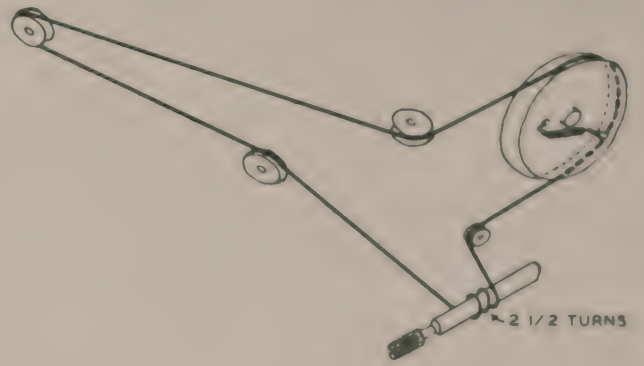
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SA7GT	0V.	0V.	250V.DC	112V.DC	-22V.DC	0V.	6.5V.AC	-.45V.DC
2	6SK7GT	0V.	0V.	2V.DC	-.45V.DC	2V.DC	123V.DC	6.5V.AC	280V.DC
3	6SQ7GT	0V.	-.4V.DC	0V.	-.4V.DC	-.4V.DC	92V.DC	6.5V.AC	0V.
4	6J5	0V.	0V.	198V.DC	9.8V.DC	3.6V.DC	55V.DC	6.5V.AC	62V.DC
5	6K6GT	0V.	0V.	270V.DC	280V.DC	0V.	270V.DC	6.5V.AC	23V.DC
6	6K6GT	0V.	0V.	270V.DC	280V.DC	0V.	-.45V.DC	6.5V.AC	23V.DC
7	5Y3GT	0V.	335V.DC	0V.	335V.AC	0V.	335V.AC	0V.	335V.DC
8	VR105-30	0V.	0V.	280V.DC	0V.	112V.DC	0V.	280V.DC	0V.

RESISTANCE READINGS

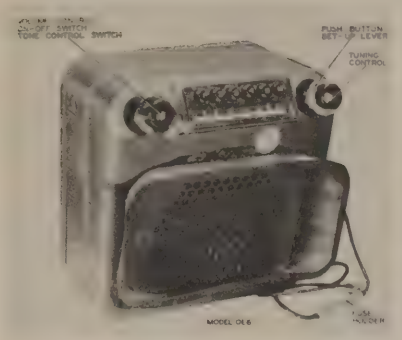
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SA7GT	0Ω	0Ω	100KΩ	95KΩ	21KΩ	.5Ω	.1Ω	1.8 MEG.
2	6SK7GT	0Ω	0Ω	145Ω	1.8 MEG.	145Ω	146KΩ	.1Ω	90KΩ
3	6SQ7GT	0Ω	10 MEG.	0Ω	850KΩ	520KΩ	560KΩ	.1Ω	0Ω
4	6J5	0Ω	0Ω	112KΩ	235KΩ	725KΩ	17KΩ	.1Ω	19KΩ
5	6K6GT	0Ω	0Ω	90KΩ	90KΩ	500KΩ	90KΩ	.1Ω	325Ω
6	6K6GT	0Ω	0Ω	90KΩ	90KΩ	460KΩ	1.8 MEG.	.1Ω	325Ω
7	5Y3GT	INF.	90KΩ	1.8 MEG.	92Ω	INF.	85Ω	INF.	90KΩ
8	VR105-30	INF.	0Ω	90KΩ	INF.	102KΩ	INF.	90KΩ	INF.

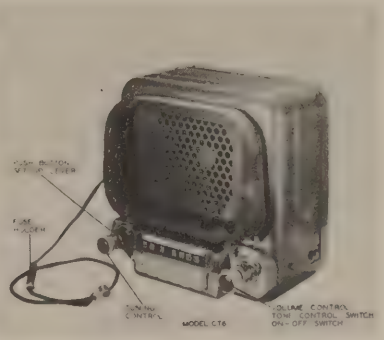
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to chassis unless otherwise noted.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



DIAL CORD DRIVE





MOTOROLA
MODELS CT6, OE6, PC6

PUSH BUTTON ADJUSTMENTS

1. Turn on receiver and allow to warm up for at least 5 minutes.
2. Press the manual button marked "M".
3. Turn the tuning knob until the desired station is tuned in.
4. Press the number one button.
5. Turn the set-up lever clockwise as far as it will go and release, allowing it to return.
6. Turn the tuning knob until the previously heard program is heard. (The dial pointer will not indicate the station to which the button is set.) The dial pointer may reach the end of the dial scale before the desired station is received. However, continue turning the tuning knob until the station is received. The dial pointer mechanism will not be affected.
7. Press the "M" button and the number one button is set. Check the setting of the button by tuning in the desired station having the "M" button pushed in and then push the automatic button. Either button should give the same volume and clarity.
8. Repeat the above procedure, steps 2 through 7, for each of the remaining push buttons.

MOTOROLA MODELS CT6, OE6, PC6

TRADE NAME	Motorola Models CT6 (Chevrolet), OE6 (Oldsmobile), PC6 (Pontiac)
MANUFACTURER	Galvin Mfg. Corp., 4545 Augusta Blvd., Chicago, Ill.
TYPE SET	Superheterodyne Automotive Set with Automatic Tuning
TUBES (SIX)	Types, 6SK7GT RF Amp.; 6SA7GT Converter, 6SK7GT IF Amp., 6SQ7GT Det.-AVC-AF, 6V6GT Power Output, 6X5GT or 0Z4 Rectifier
POWER SUPPLY	6.3 Volts DC
TUNING RANGE—BROADCAST	535-1600KC RATING 7.2 Amps. @ 6.3V DC

ALIGNMENT INSTRUCTIONS

Volume control at maximum volume position and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin 8 (grid of 6SA7. Low side to chassis.)	455KC	High freq. end (Tuning control fully clockwise)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
60 MMF. and 21" coaxial lead. Capacitor at gen. end.	Antenna receptacle.	1600KC	High freq. end. Cores are to be projecting 1-1/8" from ends of cans and tuning against stop.	"	A5, A6, A7.	Adjust for maximum output in order given.
"	"	1425KC	Exactly one full turn from high freq. end.	"	A8,A9, A10.	Adjust cores for maximum output. Mark manual tuning shaft coupling to indicate full turn.
"	"	Gen. power off but leave connected	Four more full turns in.	"	A11	Adjust for maximum noise.
			1400KC	"	A7	Install set in car and connect antenna. Adjust for maximum noise.

MOTOROLA
MODELS CT6, OE6, PC6

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SK7GT	6SK7GT	8N	
2	Converter	6SA7GT	6SA7GT	8AD	
3	IF Amp.	6SK7GT	6SK7GT	8N	
4	Det.-AVC-AF	6SQ7GT	6SQ7GT	8Q	
5	Power Output	6V6GT	6V6GT	7AC	
6A	Rectifier	0Z4	0Z4	4R	0Z4 and 6X5GT Interchangeable in this set.
6B	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MOTOROLA PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	20	400	23A75429	FP339	DY-2x20-450/	EL-322	AF44J	UP6BJ38	■ Filter
B	20	400			20-25				▲ "
C	20	25					PRS25-25	BR202A	" "
8	.006	1600	8A12840	OW344	XTIMS10-.006	TR-26	1684-006	MD16D6	Buffer
9	.5	100	8A19133	TP431	S-4-5	TC-5	484-.5	DT4P5	Hash Filter
10	.5	100	8A19133	TP431	S-4-5	TC-5	484-.5	DT4P5	" "
11	.006	400	8A71910	TP409	S-6-006	TC-26	484-006	DT6D6	6V6 Plate Bypass
12	.004	400	8A71909	TP407	S-6-004	TC-24	484-004	DT6D4	Tone Compensation
13	.03	400	8A71911	TP424	S-6-03	TC-13	484-03	DT4S3	Audio Coupling
14	.05	400	8A14791	TP426	S-4-05	TC-15	484-05	DT4S5	Muting Capacitor
15	.01	400	8K23690	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
16	.01	400	8K23690	TP421	S-4-01	TC-11	484-01	DT4S1	Tone Compensation
17	.1	400	8K13166	TP428	S-4-1	TC-1	484-.1	DT4P1	Plate Bypass
18	.05	400	8A14791	TP426	S-4-05	TC-15	484-05	DT4S5	Screen Bypass
19	.5	100	8A19133	TP431	S-4-5	TC-5	484-.5	DT4P5	Solenoid Shunt
20	.05	400	8A14791	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
21	.006	100	8A4529	TP409	S-6-006	TC-26	484-006	DT6D6	Ant. Coupling
22	250	500	21R6648	MC240	M0.5-325	1FM-325	1468-00025	5W5T25	Audio Plate Bypass
23	50	300	21R6513	MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Diode Coupling
24A	50		21A70176						Diode Filter
B	50								" "
25	400		21A71872						Fixed Trimmer Cer.
26	50	300	21R6513	MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor
27	5		21K70720						RF Coupling
28	90		21A20877						Ant. Filter

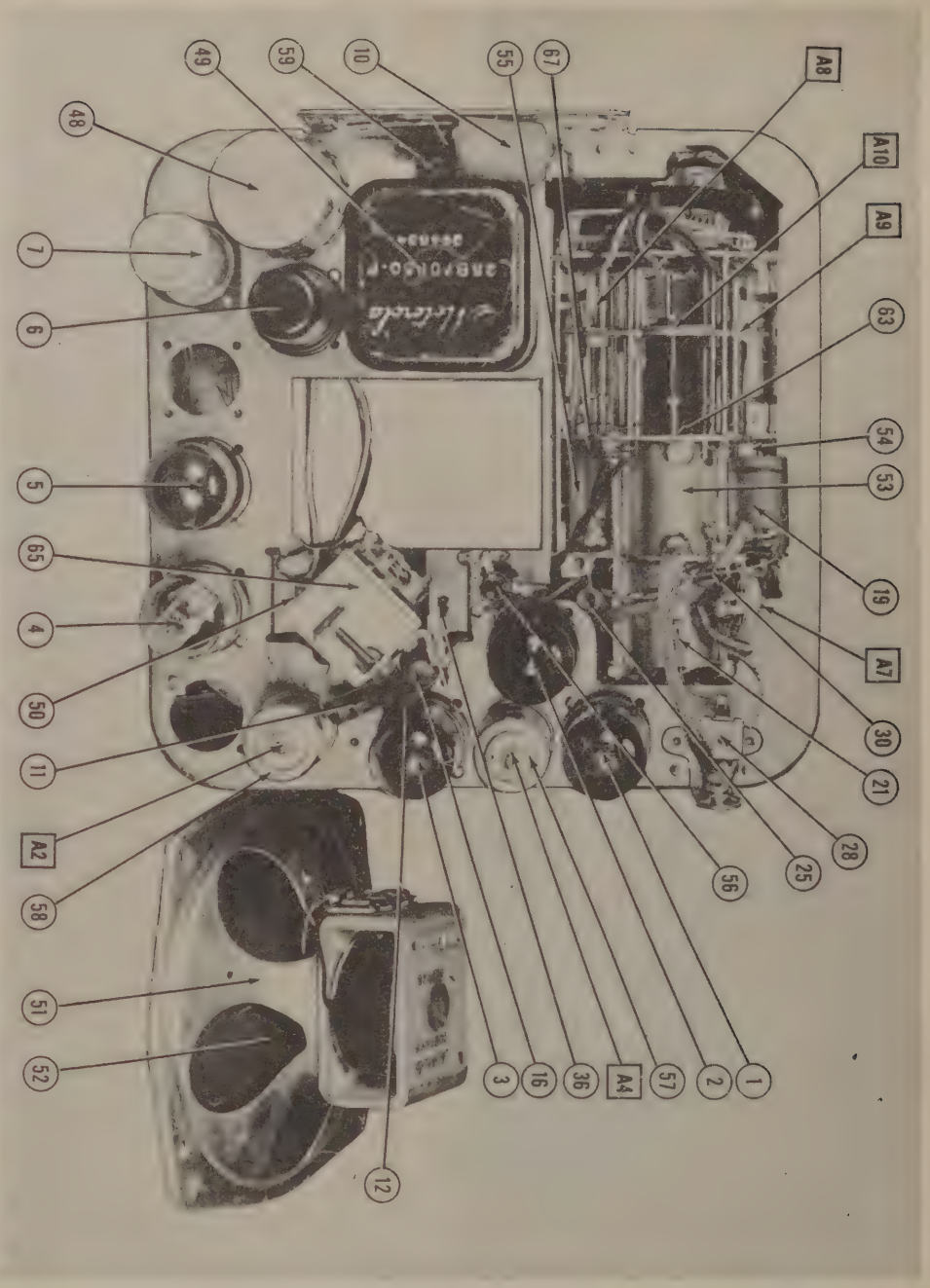
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
29	500K	1	18A70172				Volume Control & Switch 18A71925

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	IRC PART No.	IDENTIFICATION CODES
30	470KΩ	½	6R6032	BTS-470K	Yl.-Vi.-Yl. AVC Network
31	100KΩ	½	6R6075	BTS-100K	Br.-Blk.-Yl. Converter Grid
32	47KΩ	½	6R6056	BTS-47K	Yl.-Vi.-Or. Osc. Grid
33	10KΩ	1	6R6106	BTA-10K	Br.-Blk.-Or. Screen Dropping
34	330Ω	1	6R6147	BTA-330	Or.-Or.-Br. Plate Filter
35	1 Meg.	½	6R6004	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
36	22KΩ	½	6R6028	BTS-22K	Red-Red-Or. Tone Compensation
37	47KΩ	½	6R6056	BTS-47K	Yl.-Vi.-Or. IF Filter
38	3.3 Meg.	½	6R2118	BTS-3.3 Meg	Or.-Or.-Grn. 1st AF Grid
39	2.2 Meg.	½	6R3927	BTS-2.2 Meg	Red-Red-Grn. 1st AF Grid
40	470KΩ	½	6R6032	BTS-470K	Yl.-Vi.-Yl. 1st AF Plate Load
41	220KΩ	½	6R6015	BTS-220K	Red-Red-Yl. Output Grid
42	1000Ω	1	6R6184	BTA-1000	Br.-Blk.-Red Filter
43	1 Meg.	½	6R6004	BTS-1 Meg.	Br.-Blk.-Grn. Diode Load
44	180Ω	1	6R6390	BW-1-180	Br.-Gray-Br. Voltage Divider Bias
45	47Ω	½	6R5550	BW-½-47	Yl.-Vi.-Blk. " " "
46	50Ω	½	6R6005	BW-½-47	Grn.-Blk.-Blk. Hash Suppression
47	50Ω	½	6R6005	BW-½-47	Grn.-Blk.-Blk. " "

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

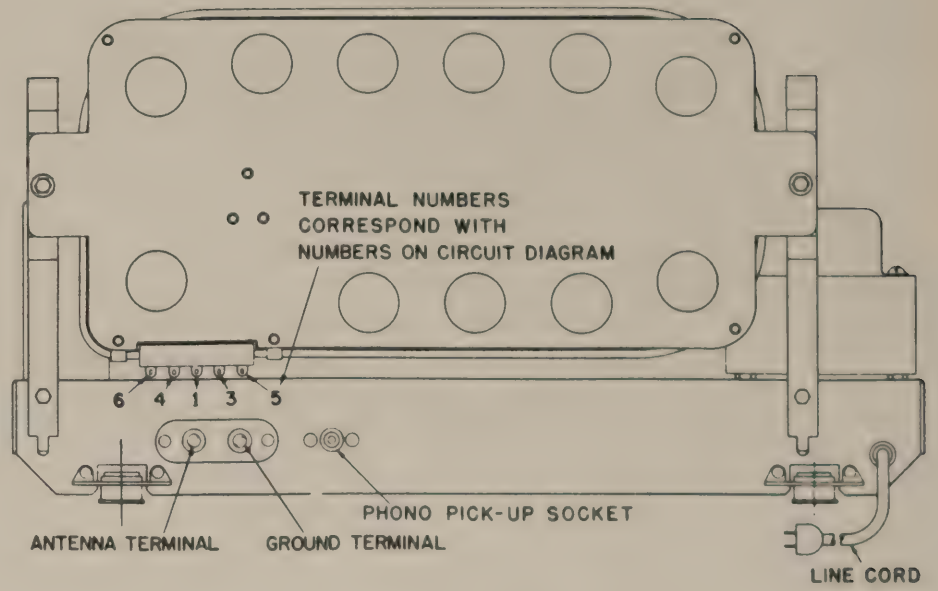
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					OLYMPIC PART No.		
67	Bayonet	6-8	0.15	Brown	BU-187		Type 47
68	Bayonet	6-8	0.15	Brown	BU-187		Type 47

MISCELLANEOUS

ITEM No.	PART NAME	OLYMPIC PART No.	NOTES
69A	Band Switch	SW-387	Model 6-602
69b	Band Switch	SW-646	Models 6-601W & 6-601V
70	Tuning Cap.	CV-144	3 Gang Variable Cap.
A7 } A11 }	Trimmer Cap.	CT-389	{ BC Ant. Adj. 3-35 MMF SW " " "
A8	Padder Cap.	CT-440	BC Osc. Pad. 350-780 MMF
	Cabinet	CA-143W	Walnut Bakelite
	"	CA-143V	Ivory "
	"	CA-152	Wood (6-602)
	Dial Scale	DL-378	Glass
	Pointer	PO-334	
	Knob	KN-422	Walnut"Volume"6-601, 6-602
	"	KN-423	" "Off-On-Tone" 6-601, 6-602
	"	KN-425	" "Tuning" " "
	"	KN-430	" "SW-BC-PH" " "
	"	KN-426	Ivory "Volume" 6-601V
	"	KN-427	" "Off-On-Tone" 6-601V
	"	KN-429	" "Tuning" 6-601V
	"	KN-431	" "SW-BC-PH" 6-601V

REAR VIEW OF RECEIVER CHASSIS WITH CABINET BACK REMOVED



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA OLYMPIC PART No.	REPLACEMENT DATA IRC PART No.	IDENTIFICATION CODES
35	[illegible]	½	REB-[illegible]	BW-½-220	Red-Red-Br. RF Cathode
36	68KΩ	½	REB-683K	BTS-68K	Blue-Gray-Or. RF Screen Dropping
37	100Ω	½	REB-[illegible]	BW-½-100	Br.-Blk.-Br. Converter Cathode
38	10KΩ	½	REB-[illegible]	BTS-10K	Br.-Blk.-Or. " Screen Dropping
39	1 [illegible]	½	REB-102M	BTS-1000	Br.-Blk.-Red " Plate Decoupling
40	[illegible]	½	REB-223M	BTS-22K	Red-Red-Or. Oscillator Grid
41	470Ω	½	REB-[illegible]	BTS-4700	Yl.-Vi.-Red " Cathode
42	[illegible]	½	REB-[illegible]	BW-½-220	Red-Red-Br. IF Cathode
43	[illegible]	½	REB-683K	BTS-68K	Blue-Gray-Or. " Screen Dropping
44	47KΩ	½	REB-473M	BTS-47K	Yl.-Vi.-Or. Diode Filter
45	1 Meg.	½	REB-105M	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
46	470KΩ	½	REB-474M	BTS-470K	Yl.-Vi.-Yl. Diode Load
47	[illegible]	½	REB-332M	BTS-3300	Or.-Or.-Red 1st AF Cathode
48	470KΩ	½	REB-474M	BTS-470K	Yl.-Vi.-Yl. " " Grid
49	150KΩ	½	REB-154M	BTS-150K	Br.-Grn.-Yl. " " Plate Load
50	1.5 Meg.	½	REB-155M	BTS-1.5 Meg.	Br.-Grn.-Grn. Feedback
51	330Ω	1	REC-331K	BTA-330	Or.-Or.-Br. Output Cathode
52	[illegible]	½	REB-[illegible]	BTS-22K	Red-Red-Or. Antenna Loading
53	2.2 Meg.	½	REB-225M	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
54	10KΩ	1	REC-103M	BTA-10K	Br.-Blk.-Or. Filter
56	100KΩ	2	RED-104M	BT-2-100K	Br.-Blk.-Yl. Bleeder
71	1 Meg.	½	RED-105M	BTS-1 Meg.	Br.-Blk.-Grn. IF Grid See Note 1

Note 1: Not Used in all Models

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA OLYMPIC PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDARSON PART No.	INSTALLATION NOTES
58	117 VAC @ 0.10 A	[illegible] VCT @ 0.08 A	6.3 VAC @ 1.6 A	6.3 VAC @ 1.6 A	TR-112	P-6013	T-13R13	

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA OLYMPIC PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDAR'N PART No.		INSTALLATION NOTES
57	5440Ω	3.1Ω	310Ω	.66Ω	Part of SK325	A-3310	T-22S62		

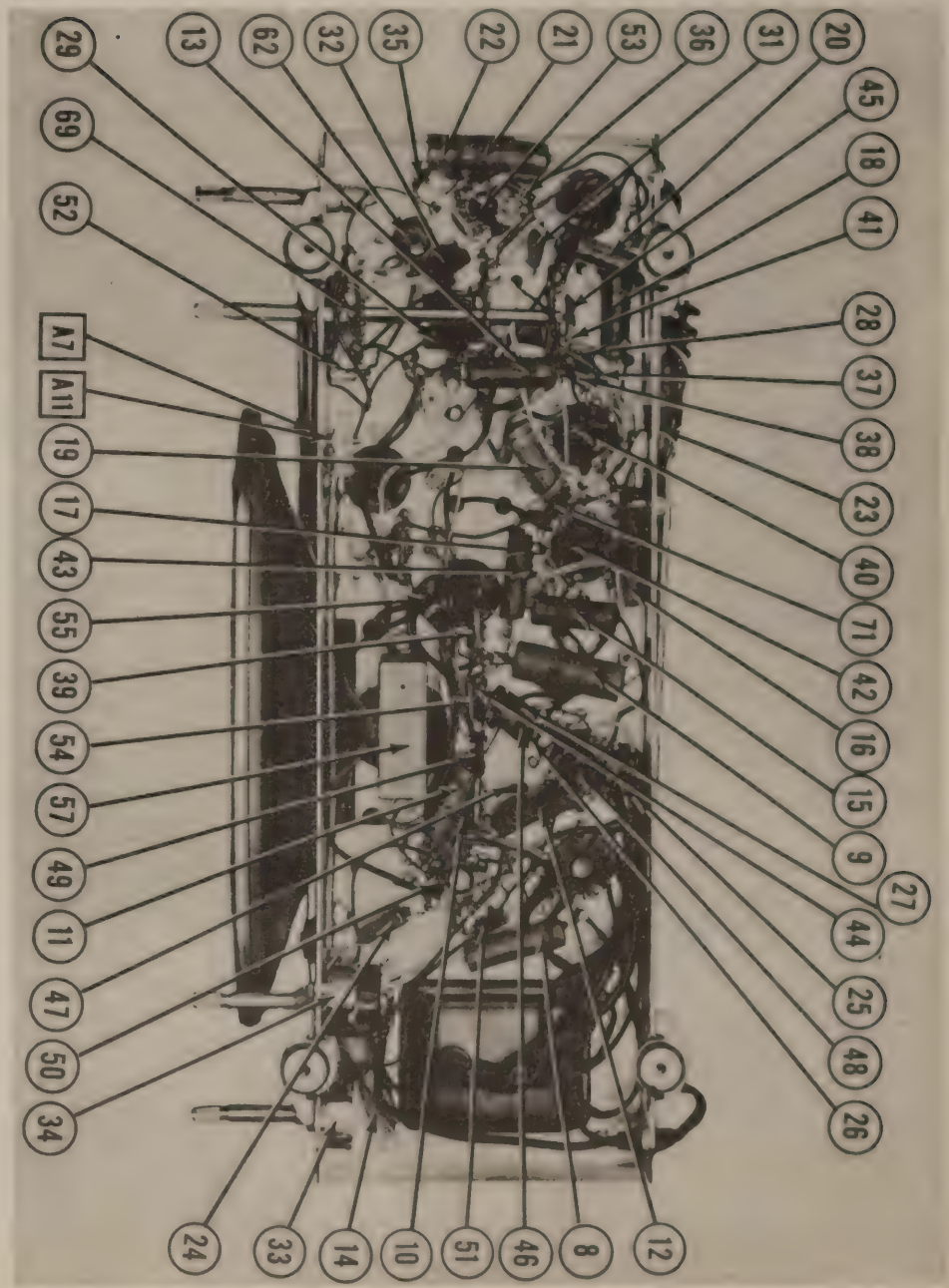
SPEAKER

ITEM No.	RATINGS	REPLACEMENT DATA OLYMPIC PART No.	REPLACEMENT DATA JENSEN PART No.		INSTALLATION NOTES
59	[illegible]	SK-325			
59	[illegible]	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

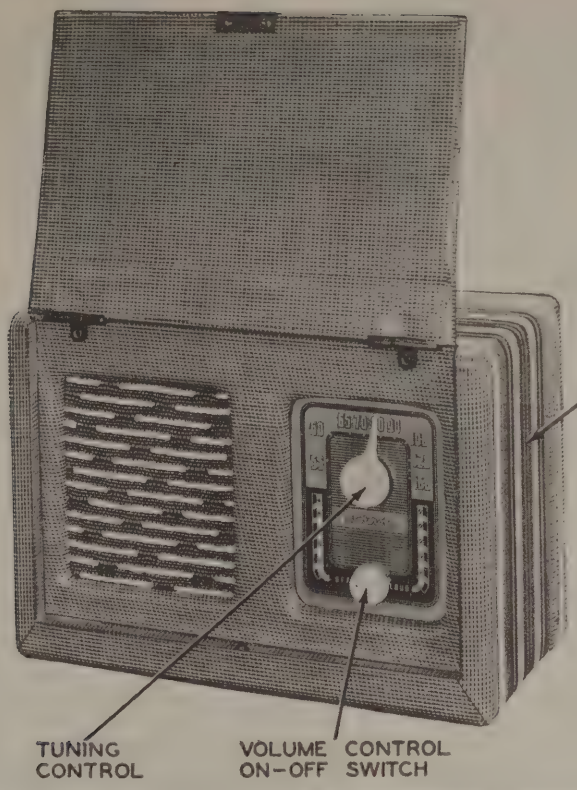
R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA OLYMPIC PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
60	Ant. Load Coil	12Ω				
61A	BC Loop	.3Ω	.6Ω	LP213		Items 61A,61B fastened to same back
61B	SW Loop	0Ω		LP213		
62A	BC Loop Load Coil	1.5Ω		CL211		Items 62A,62B wound on same form
62B	SW Loop Load Coil	0Ω		CL211		
63A	BC RF Coil	9Ω	2.7Ω	CL224		Items 63A,63B in same can
63B	SW RF Coil	0Ω	.1Ω	CL224		
64A	BC Osc. Coil	.5Ω	3.1Ω	CL212		Items 64A,64B in same can
64B	SW Osc. Coil	0Ω	0Ω	CL212		
65	Input IF	24.3Ω	21Ω	TR115	16-6658	
66	Output IF	5.3Ω	20Ω	TR115	16-6660	

CHASSIS—BOTTOM VIEW



MOTOROLA
MODELS 65L11, 65L12



MOTOROLA
MODELS 65L11, 65L12

MOTOROLA MODEL 65L11

TRADE NAME	Motorola Models 65L11, 65L12 (Chassis HS-7)
MANUFACTURER	Galvin Mfg. Corp., 4545 Augusta Blvd., Chicago 51, Illinois
TYPE SET	Three Power Portable AC-DC Battery Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types, 1N5GT RF Amp., 1A7GT Converter, 1N5GT IF Amp., 1H5GT Det.-AVC-AF, 3Q5GT Power Output, 117Z6GT Rectifier
POWER SUPPLY	117 Volts AC-DC or 2 each 4½V "A" Battery (Eveready #746 or equivalent) 2 each 45V "B" Battery (Eveready Mini-Max #482 or equivalent)
TUNING RANGE—BROADCAST	535-1600KC RATING 49MA @ 9V DC & 14.5MA @ 90V DC - 63MA @ 117V AC

ALIGNMENT INSTRUCTIONS

Use battery power for alignment whenever possible. If AC power is used, use isolation transformer if available. If not, connect capacitor in series with low side of signal generator and B-. Volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to grid cap of 1A7. Low side to B-.	455KC	High freq.end	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If aligned on AC power and isolation trans. is not used, reduce dummy to .001 MFD. to reduce excessive hum modulation.
	Loop	1600KC	"	"	A5	Connect two turns of wire approximately 12" in diameter to output of signal generator and radiate signal into receiver loop. Adjust for maximum output.
	"	1400KC	Tune for maximum output.	"	A6,A7	"
	"	600KC	"	"	A8	Rock dial and adjust for maximum output. Recheck A5 at 1600KC and A6, A7 at 1400KC.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	1N5GT	1N5GT	5Y	
2	Converter	1A7GT	1A7GT	7Z	
3	IF Amp.	1N5GT	1N5GT	5Y	
4	Det.-AVC-AF	1H5GT	1H5GT	5Z	
5	Power Output	3Q5GT	3Q5GT	7AP	
6	Rectifier	117Z6GT	117Z6GT	7Q	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MOTOROLA PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	23A25889	FP357	DY-3x40-150	EL-340		UP6CJ44	■ Filter
B	40	150							"
C	40	150							▲ "
8	80	25	23A25888	TC2501			PRS25-100		Filament Bypass
9	.05	400	8S9816	TP426	S-4-05	TC-15	484-05	DT4S5	Line Filter
10	.2	400	1X7527-1	TP428	S-4-2	TC-2	484-.2	DT4P2	Line Isolation Trap*
11	.007	600	8A51091	TP445	S-6-01	TC-11	684-01	DT6S1	3Q5 Plate Bypass
12	.01	400	8S9801	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
13	.1	200	8S9806	TP429	S-4-1	TC-1	484-.1	DT4P1	RF Bypass Pwr. Supp
14	.05	200	8S9805	TP426	S-4-05	TC-15	484-05	DT4S5	Filament Bypass
15	.01	100	8S9801	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
16	.1	200	8S9806	TP428	S-4-1	TC-1	484-.1	DT4P1	RF Bypass Pwr. Supp
17	.01	100	8S9801	TP421	S-4-01	TC-11	484-01	DT4S1	IF Grid Bypass
18	.01	200	8S9825	TP421	S-4-01	TC-11	484-01	DT4S1	Conv. Screen Bypass
19	.05	400	8S9816	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
20	.05	400	8S9816	TP426	S-4-05	TC-15	484-05	DT4S5	RF Grid Bypass
21	100	500	21R6641	MC235	M0.5-31	1FM-31	1468-0001	5W5T1	Audio Plate Bypass
22	100	500	21R6641	MC235	M0.5-31	1FM-31	1468-0001	5W5T1	RF Coupling

*Wind same number of turns of wire on replacement as on original.

CONTROLS

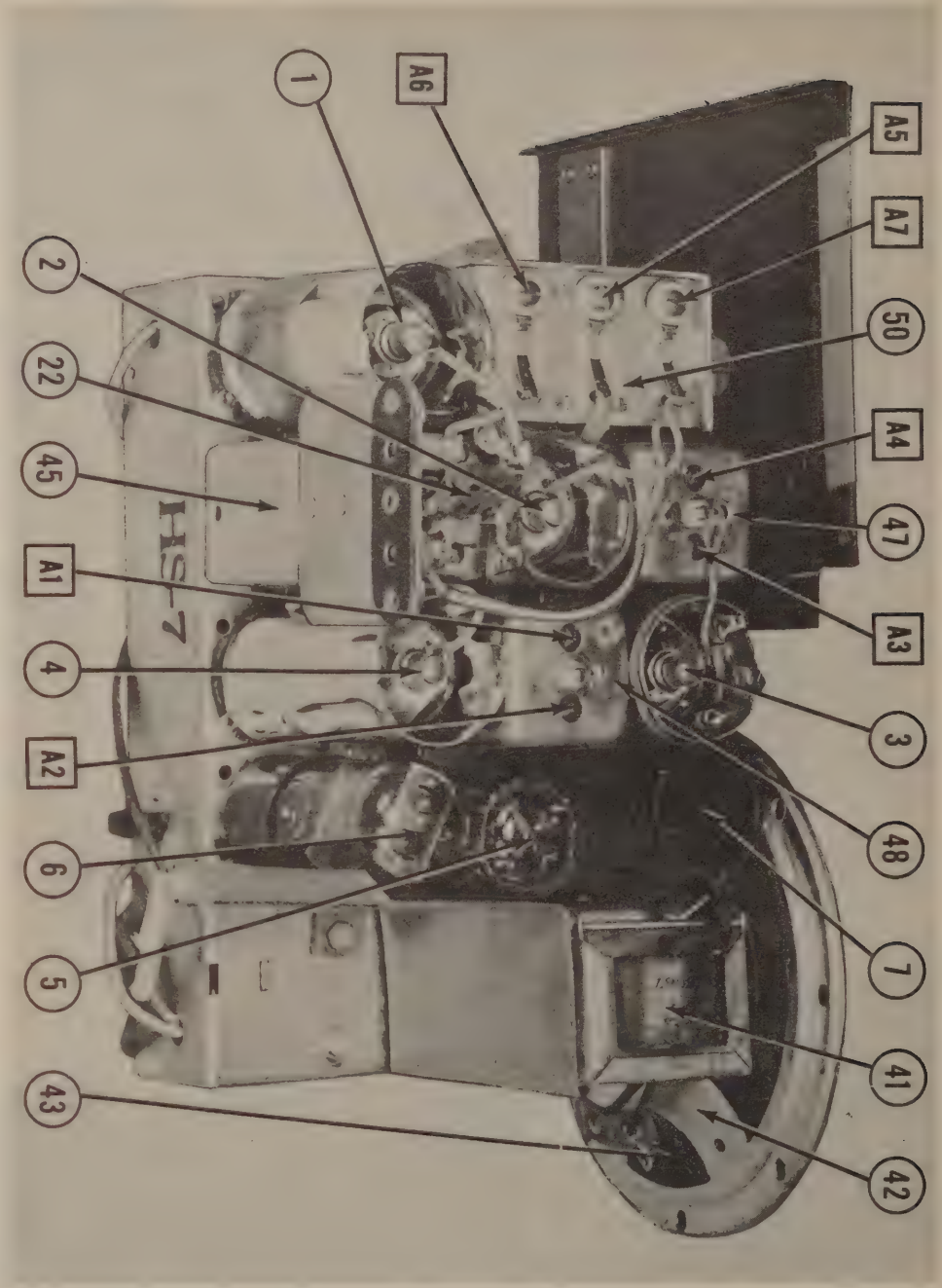
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
23A	1 Meg.	1	18A25882-0	MK402	D13-137	AM-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 23A per instructions
C	Switch		" "	M27	42	SW-A2	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	IRC PART No.	IDENTIFICATION CODES
24	3.3 Meg.	½	6R6201	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
25	5.6 Meg.	½	6R6303	BTS-5.6 Meg.	Grn.-Blue-Grn. AVC Network
26	2.2 Meg.	½	6R6202	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
27	220KΩ	½	6R6349	BTS-220K	Red-Red-Yl. Osc. Grid
28	68KΩ	½	6R6256	BTS-68K	Blue-Gray-Or. Converter Screen Dropping
29	8.2 Meg.	½	6R6310	BTS-8.2 Meg.	Gray-Red-Grn. IF Grid
30	2.2 Meg.	½	6R6202	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
31	4700Ω	½	6R6039	BTS-4700	Yl.-Vi.-Red Series Volume Control
32	3.3 Meg.	½	6R6201	BTS-3.3 Meg.	Or.-Or.-Grn. 1st AF Grid
33	470KΩ	½	6R6160	BTS-470K	Yl.-Vi.-Yl. 1st AF Plate Load
34	2.2 Meg.	½	6R6202	BTS-2.2 Meg.	Red-Red-Grn. Output Grid
35	250Ω	½	6R2088	BW-½-270	Red-Grn.-Br. Filament String
36	500Ω	½	6R6461	BTS-470	Grn.-Blk.-Br. Bias
37	10Ω	½	6R5621	BW-½-10	Br.-Blk.-Blk. Series Filament Supply
38	3300Ω	½	6R6084	BTS-3300	Or.-Or.-Red Filter
39	2550Ω	10	17A25877-B	ABA-2500#	Filament Dropping and Filter
40	27Ω	½	6R5683	BW-½-27	Red-Vi.-Blk. Rectifier Ballast

#Adjust tap to 1250Ω from one end.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MOTOROLA PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
41	9000Ω	3.9Ω	630Ω	.65Ω	25K28067	A-3879†	T-22847†		†Bend mounting tabs down, file out slots and mount on original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			MOTOROLA PART No.	JENSEN PART No.		
42	FIELD PM	VC IMP. 3.9Ω	50C70091A	ST-107 Mod. P5.V		
43	CONE DIA. 4-3/4"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

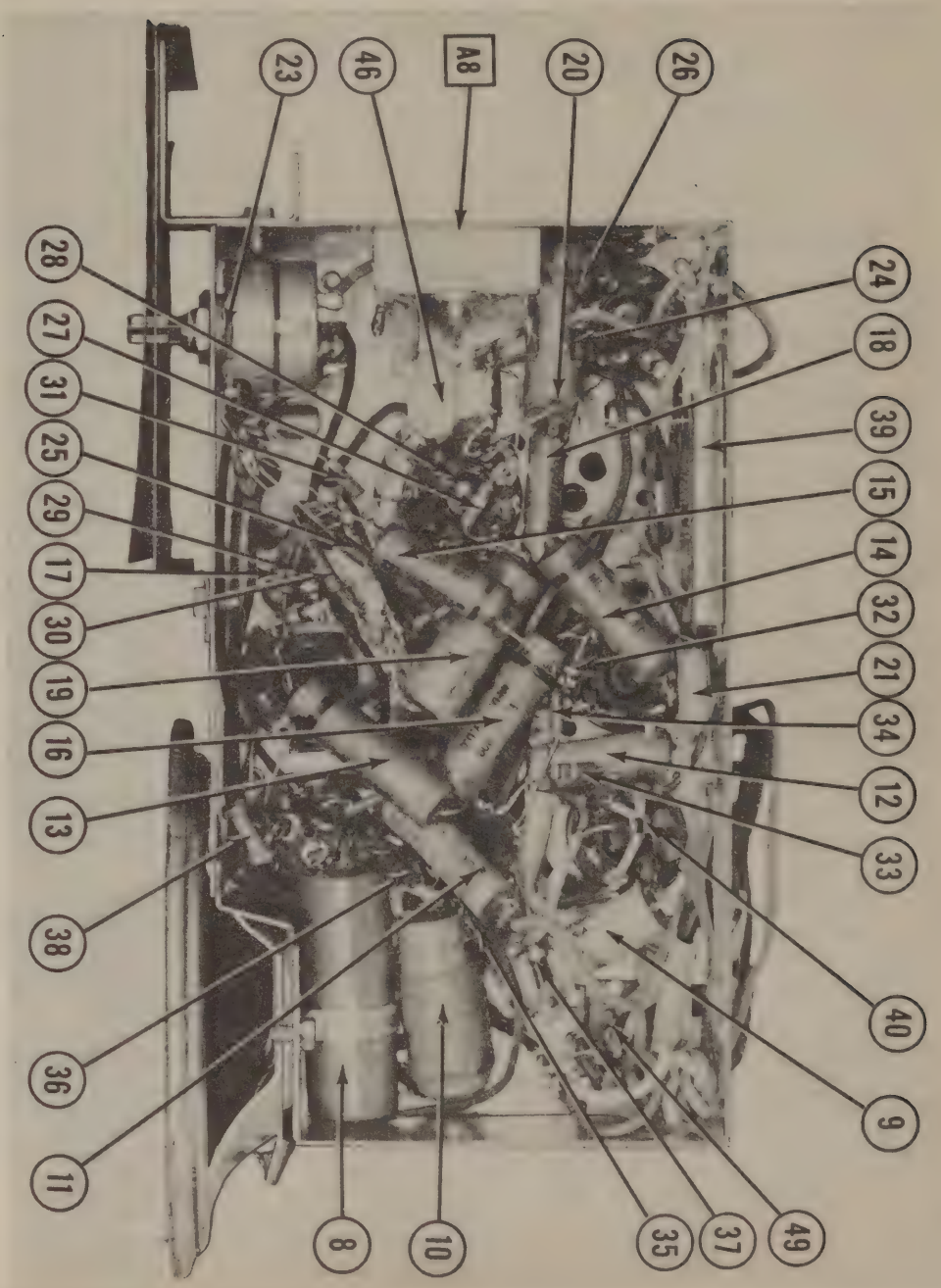
R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	MOTOROLA PART No.	MEISSNER PART No.	
44A	Loop Ant.		3Ω	15C25945		Model 65L11
B	" "			15K27466		Model 65L12
45	RF Coil	115Ω	3.5Ω	1X25906		Includes Shield & Exten. Loop Recept.
46	Osc. Coil	3.5Ω	12Ω	24A25936	14-1040	Add 50 MMFD cap. from high side tuning cap. to grid.
47	Input IF	26Ω	32Ω	1X25904	16-6658	
48	Output IF	24Ω		1X25902	16-6670	

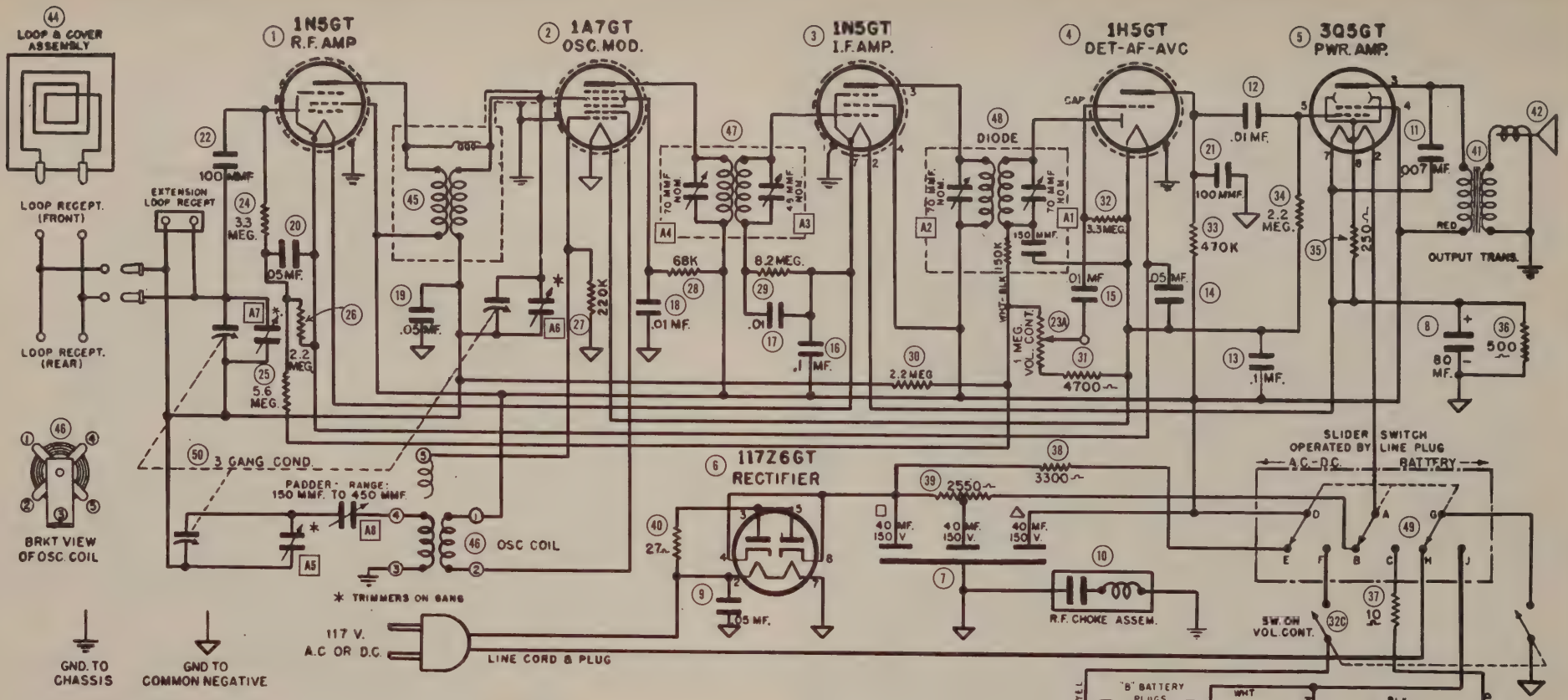
MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
49	Switch	40A27114 or 40B76395	Slider, Triple Pole Double Throw Rotary, " " " "
50	Tuning Cap.	19B25923	3 Gang Variable
A8	Padder Cap.	20A25899	Osc. Padder Adj. (150-450 MMF)
	Cabinet	1X74392	Model 65L11
	"	1X74380	" 65L12
	Knob	36A25865	Tuning Control
	"	36A25864	Volume "
	Dial Scale	1X25918	Mtg. Bracket & Crystal
	Handle	55B71030	Molded
	Pointer	52B25875	
	Plug	28A20361	Two Prong "A" Battery
	"	28A12250	Three Prong "B" Battery

CHASSIS—BOTTOM VIEW



MOTOROLA MODELS 65L11, 65L12



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NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN 117 VOLT AC-DC POSITION.

VOLTAGE READINGS

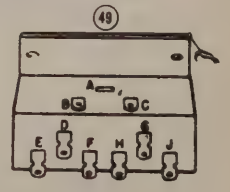
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1N5GT	0V.	4.4V.AC	88V.DC	88V.DC	0V.	.05V.DC	3V.AC	0V.	7 MEG.
2	1A7GT	0V.	1.45V.AC	88V.DC	40V.DC	-.15V.DC	88V.DC	0V.	.05V.DC	2.8MEG.
3	1N5GT	0V.	5.8V.AC	88V.DC	88V.DC	88V.DC	0V.	4.4V.AC	0V.	4.5MEG.
4	1H5GT	0V.	3V.AC	68V.DC	0V.	.05V.DC	0V.	1.45V.AC	0V.	3.5MEG.
5	3Q5GT	0V.	8.3V.AC	83V.DC	88V.DC	0V.	0V.	5.8V.AC	7V.AC	
6	117Z6GT	0V.	117V.AC	116V.AC	127V.DC	116V.AC	0V.	0V.	127V.DC	

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1N5GT	INF.	*	5.3KΩ	5.3KΩ	4.5MEG.	1.5 MEG.	*	INF.	1V.DC
2	1A7GT	INF.	*	5.3KΩ	66KΩ	200KΩ	5.3KΩ	*	1.5MEG	+3V.DC
3	1N5GT	INF.	*	5.3KΩ	5.3KΩ	5.3KΩ	INF.	*	INF.	1V.DC
4	1H5GT	INF.	*	410KΩ	INF.	1MEG.	3.5MEG.	*	0Ω	1V.DC
5	3Q5GT	INF.	*	6KΩ	5.3KΩ	1.8MEG.	INF.	*	*	
6	117Z6GT	INF.	220Ω	250Ω	2.2KΩ	250Ω	INF.	0Ω	2.2KΩ	

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS



468-22

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

SONORA
MODEL RQU-222

SONORA
MODEL RQU-222

SONORA MODEL RQU-222

TRADE NAME	Sonora Model RQU-222
MANUFACTURER	Sonora Radio & Television Corp., 325 N. Hoyne Ave., Chicago, Ill.
TYPE SET	AC-DC Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types, 12SK7 RF Amp., 12SA7 Converter, 12SK7 IF Amp., 12SQ7 Det.-AVC-AF, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110 - 120 Volts AC-DC
TUNING RANGE—BROADCAST	535-1620KC RATING .225 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

To set pointer turn tuning control fully clockwise and set pointer 1-13/16" from right end of dial backplate. Use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin #8 of 12SA7. Low side to B-.	455KC	High freq. end (Right end of dial)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation trans. is not used, reduce dummy ant. to .001 MFD. to reduce excessive hum modulation.
.1 MFD.	"	1620KC	"	"	A5	"
.1 MFD.	"	1000KC	4-3/16" from right end of dial backplate	"	A6	Adjust for maximum output. Recheck A5 at 1620KC.
100 MMF.	High side to ant. lead. Low side to B-.	1620KC	High freq. end (Right end of dial)	"	A7	Adjust for maximum output.
100 MMF.	"	1000KC	Tune for maximum output.	"	A8, A9	Turn A8 about a half turn and then retune signal. Turn A9 about a half turn and retune signal. Repeat these adjustments until maximum output is reached. Keep A8 and A9 as even as possible.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: SONORA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12SK7	12SK7	8N	
2	Converter	12SA7	12SA7	8R	
3	IF Amp.	12SK7	12SK7	8N	
4	Det.-AVC-AF	12SQ7	12SQ7	8Q	
5	Power Output	35L6GT	35L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SONORA PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	N-3658	2N511	M-2x40-150	TA-440	PRSA150-40-40	BRD4415	Filter - Blue
B	40	150							" - Red
8	.05	400	N-1346	TP426	S-4-05	TC-15	484-05	DT4S5	Line Filter
9	.01	400	N-1344	TP421	S-4-01	TC-11	484-01	DT4S1	35L6 Plate Bypass
10	.05	400	N-1346	TP426	S-4-05	TC-15	484-05	DT4S5	Tone Compensation
11	.01	400	N-1344	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
12	.0005	600	N-4890	TP403	S-6-0005	TC-35	1468-0005	DT6T5	Audio Plate Bypass
13	.005	600	N-4894	TP408	S-6-005	TC-25	684-005	DT6D5	Audio Coupling
14	.2	200	N-5160	TP428	S-4-2	TC-2	484-.2	DT4P2	Line Isolation
15	.1	200	N-1351	TP429	S-4-1	TC-1	484-.1	DT4P1	Conv. Screen Bypass
16	.05	200	N-1345	TP426	S-4-05	TC-15	484-05	DT4S5	RF Screen Bypass
17	.05	200	N-1345	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
18	100	500	N-1374	MC235	M0.5-31	1FM-31	1468-0001	5W5T1	IF Bypass Diode
19	50	500	N-1342	MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor
20	150	500	N-2383	MC236	M0.5-315	1FM-315	1468-00015	5W5T15	RF Coupling
21	50	500	N-1342	MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Ant. Coupling

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SONORA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
22A	500KΩ	1	N-5026	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 22A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

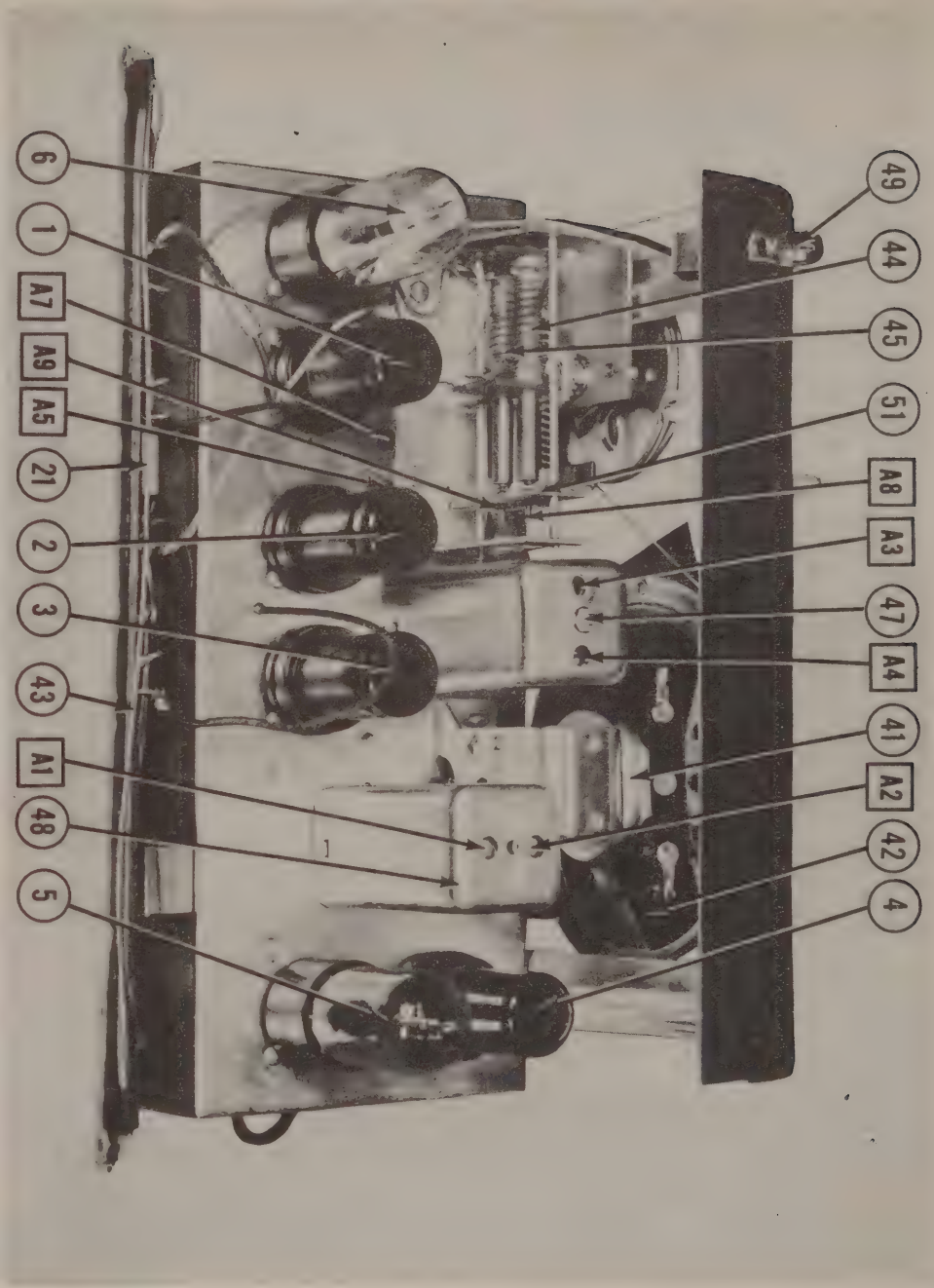
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SONORA PART No.	IRC PART No.	IDENTIFICATION CODES
23	22KΩ	½	N-5351	BTS-22K	Red-Red-Or. RF Screen Dropping
24	4700Ω	½	N-4278	BTS-4700	Yl.-Vi.-Red RF Plate Load
25	47KΩ	½	N-4087	BTS-47K	Yl.-Vi.-Or. Converter Grid
26	22KΩ	½	N-5351	BTS-22K	Red-Red-Or. Oscillator Grid
27	15 Meg.	½	N-5624	BTS-15 Meg.	Br.-Grn.-Blue AVC Network
28	3.3 Meg.	½	N-4062	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
29	47KΩ	½	N-4063	BTS-47K	Yl.-Vi.-Or. Diode Load
30	4.7 Meg.	½	N-4061	BTS-4.7 Meg.	Yl.-Vi.-Grn. 1st AF Grid
31	220KΩ	½	N-4988	BTS-220K	Red-Red-Yl. 1st AF Plate Load
32	470KΩ	½	N-4027	BTS-470K	Yl.-Vi.-Yl. Output Grid
33	180Ω	½	N-4067	BW-½-180	Br.-Gray-Br. Output Cathode
34	1500Ω	1	N-5623	BTA-1500	Br.-Grn.-Red Filter
35	33Ω	½	N-4022	BW-½-33	Or.-Or.-Blk. Surge Limiter
36	33Ω	1	N-4628	BT-1-33	Or.-Or.-Blk. Line Dropping
37	220KΩ	½	N-4026	BTS-220K	Red-Red-Yl. Line Isolating
38	33Ω	½	N-4022	BW-½-33	Or.-Or.-Blk. IF Cathode
39	470Ω	½	N-4066	BTS-470	Yl.-Vi.-Br. Voltage Dropping

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SONORA PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
40	2100Ω	2.6Ω	205Ω tapped @ 7.5Ω	.65Ω	N-4875	A-3876*			*Add additional filter to reduce hum level.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA SONORA PART No.	REPLACEMENT DATA JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-1051		
41	PM	2.6Ω	N-4868	Mod. P5-X		Fabricate new mounting bracket.
	CONE DIA.	VC DIA.				
42	4-5/8"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

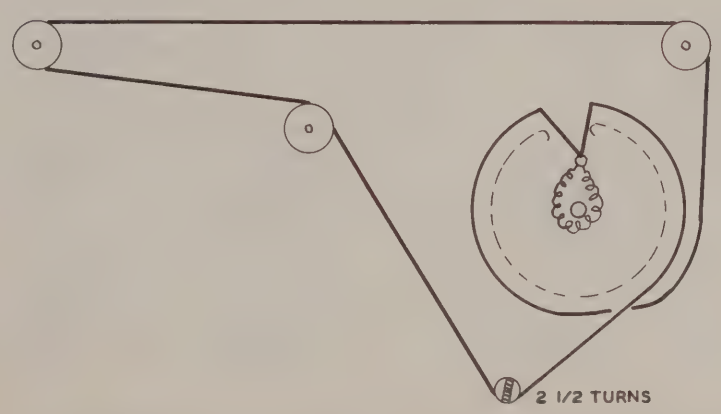
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA SONORA PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
43	Loop Ant.	.5Ω	.5Ω	N5374		
44A	Preselector Coil		1.9Ω			Items 44A, 44B, 45A, 45B, 46 are ganged together and slug tuned. May be obtained as complete tuning assby. under part no. N5640
B	Preselector Coupling	0Ω				
45A	RF Coil		1.9			
B	Preselector Coupling	0Ω				
46	Osc. Coil	1Ω	5Ω			
47	Input IF	12.6Ω	14.5Ω	N4572	16-6658	
48	Output IF	33Ω	19Ω	N5571	16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA SONORA PART No.		INSTALLATION NOTES
49	Bayonet	6-8	0.15	Brown			Type 47

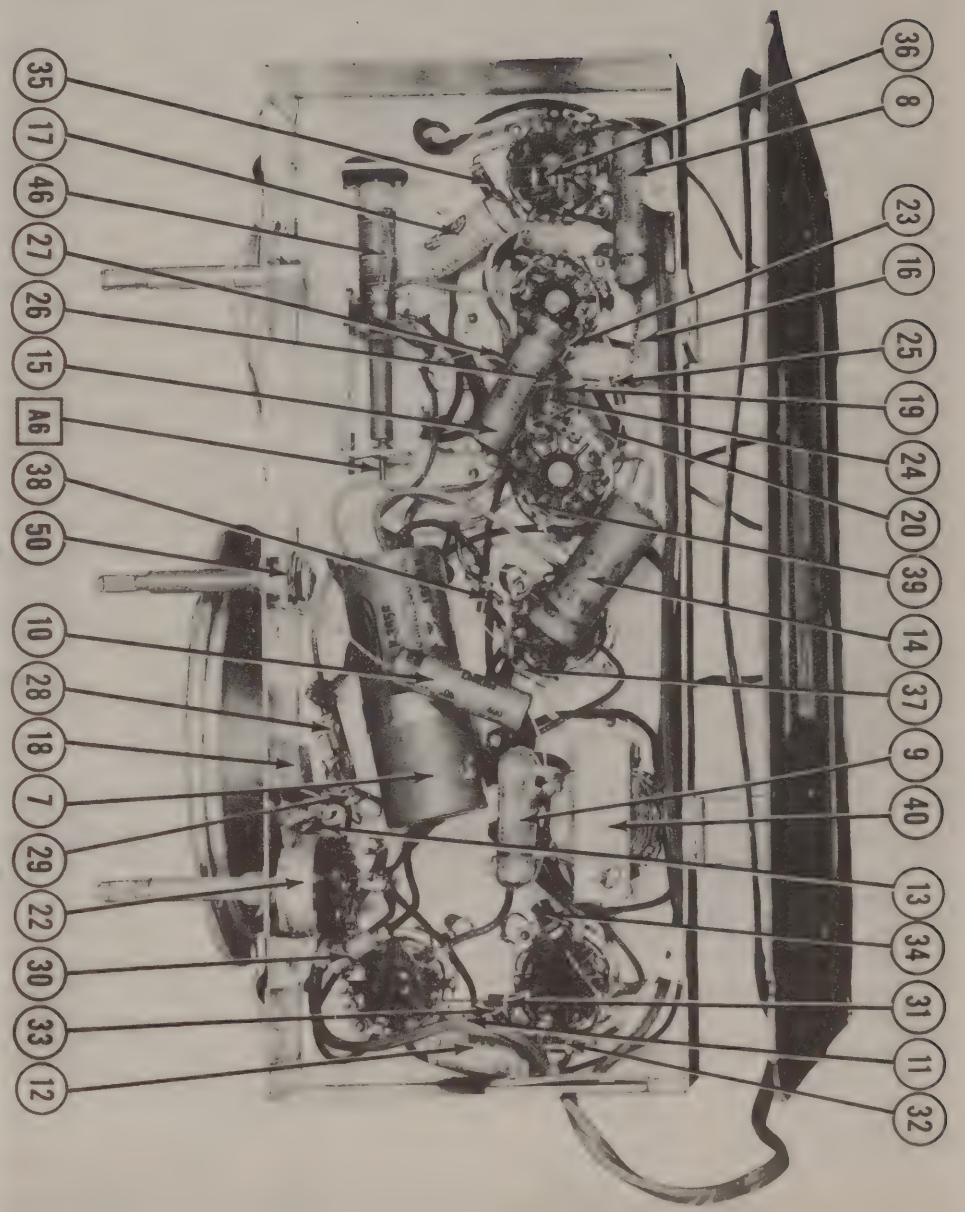
MISCELLANEOUS

ITEM No.	PART NAME	SONORA PART No.	NOTES
50	Tone Switch	N-4942	
51	Tuner Assby.	N-5640	
A5	Trimmer Cap.	N-5552	Osc. Adj.
A6	" "		Ant. "

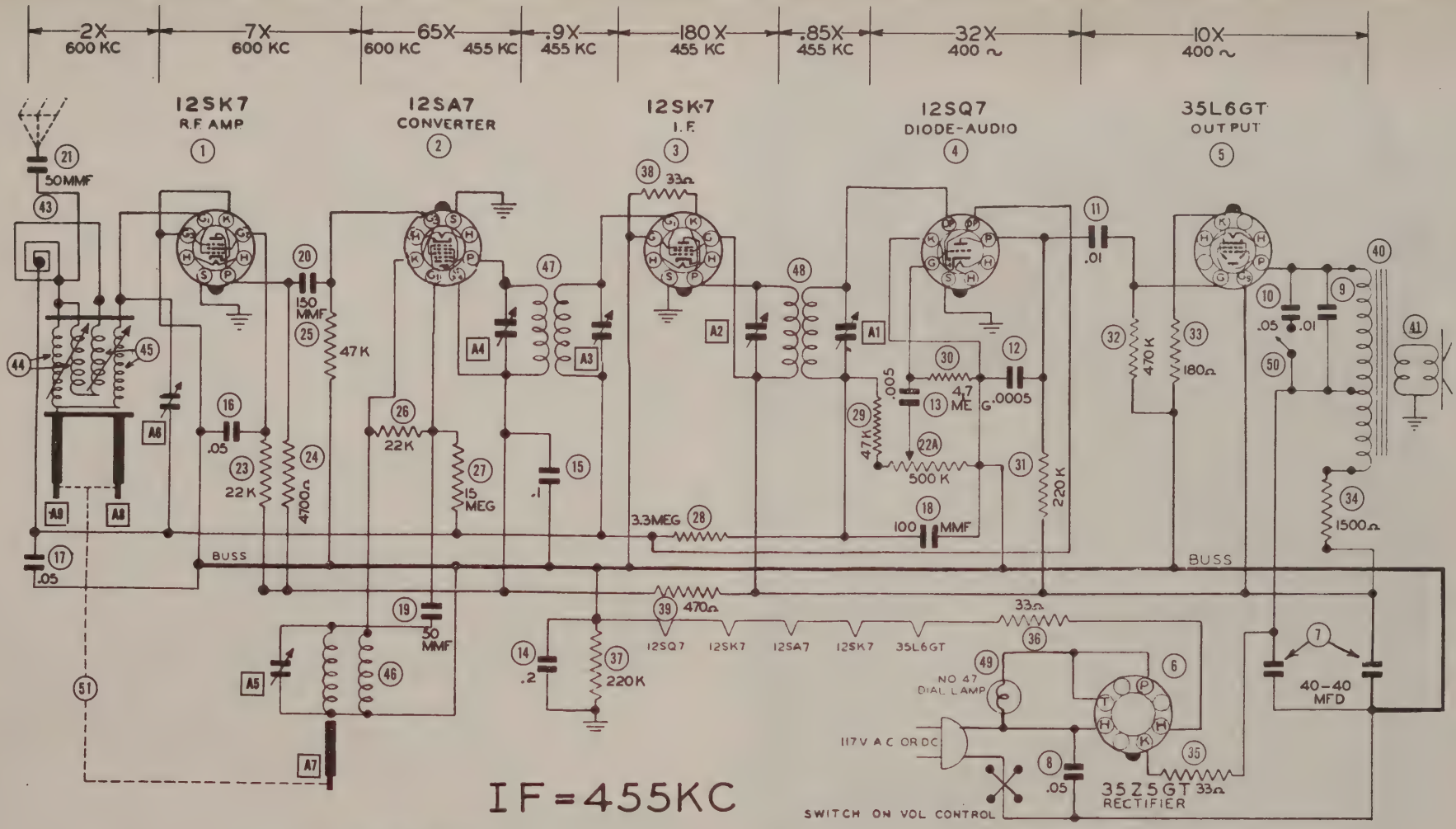


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



SONORA MODEL RQ1-232



IF=455KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7	0V.	24V.AC	0V.	-.4V.DC	0V.	57V.DC	12V.AC	58V.DC
2	12SA7	0V.	24V.AC	76V.DC	76V.DC	-2V.DC	0V.	35V.AC	-2V.DC
3	12SK7	0V.	45.5V.AC	0V.	-.4V.DC	.3V.DC	82V.DC	35VAC	82V.DC
4	12SQ7	0V.	-.55V.DC	0V.	-.4V.DC	-.4V.DC	55V.DC	12VAC	0V.
5	35L6GT	0V.	45.5V.AC	113V.DC	82V.DC	0V.	0V.	82VAC	5.2V.DC
6	35Z5GT	0V.	117VAC	113V.AC	82V.DC	113V.AC	118V.DC	87VAC	119V.DC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7	200KΩ	22Ω	0Ω	2.8MEG.	0Ω	100KΩ	11Ω	85KΩ
2	12SA7	200KΩ	22Ω	80KΩ	80KΩ	19.5KΩ	.5Ω	33Ω	48KΩ
3	12SK7	200KΩ	43Ω	0Ω	2.8MEG.	29Ω	80KΩ	33Ω	80KΩ
4	12SQ7	200KΩ	4.7MEG	0Ω	400KΩ	400KΩ	300KΩ	11Ω	0Ω
5	35L6GT	INF.	43Ω	80KΩ	80KΩ	370KΩ	0Ω	72Ω	150Ω
6	35Z5GT	INF.	128Ω	125Ω	72Ω	125Ω	80KΩ	102Ω	80KΩ

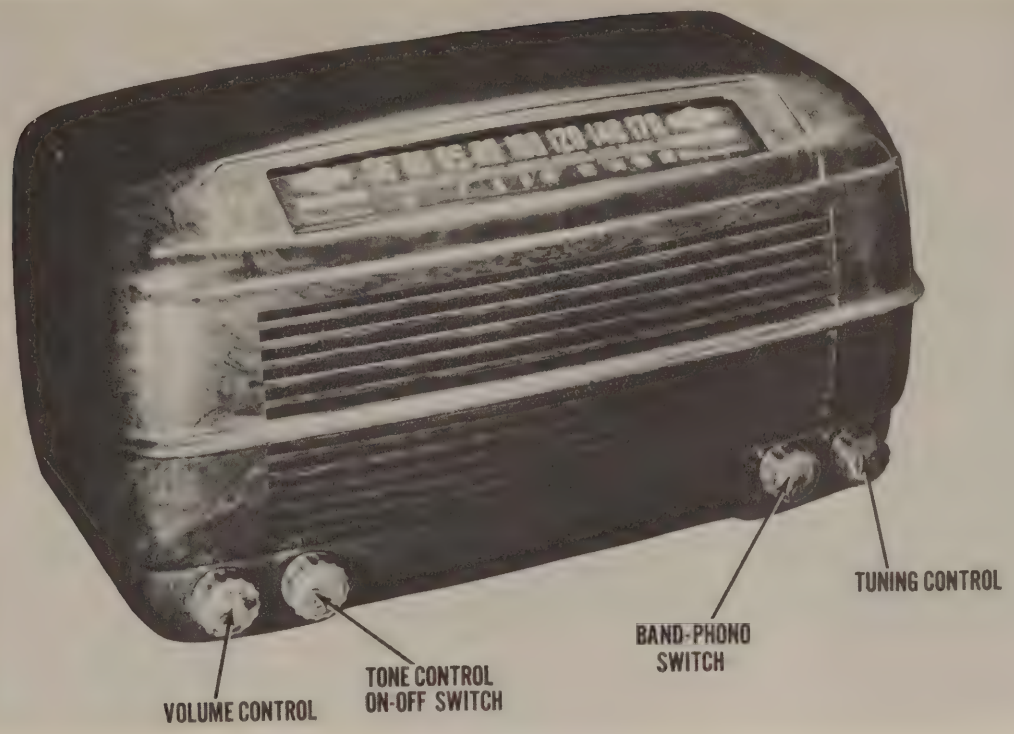
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

468-23

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

OLYMPIC
MODELS 6-601W, 6-601V, 6-602



OLYMPIC MODEL 6-601W

TRADE NAME	Olympic Models 6-601W, 601V, 6-602
MANUFACTURER	Olympic Radio & Television Div. of Hamilton Radio Corp. 510 Avenue of the Americas, New York, N. Y.
TYPE SET	AC Operated 2 Band Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types, 6SG7 RF Amp., 6SA7 Converter, 6SK7 IF Amp. 6SQ7GT Det.-AVC-AF, 6V6GT Power Output, 5Y3GT Rectifier
POWER SUPPLY	105-125 Volts AC RATING .610 Amps. @ 117V AC
TUNING RANGE--BROADCAST	535-1700KC **SHORT WAVE** 5.7 - 18.4 MC

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer at dot at left end of diffuser plate. Set volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. For alignment of RF sections connect output of signal generator to two turns of wire approximately 12 inches in diameter and radiate signal into receiver loop. Use insulated alignment screwdriver for adjusting. To check setting of A9 turn signal generator 910KC above the alignment frequency. The image frequency (much weaker) should be heard. If it is not repeat adjustment of A9 and recheck.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin #4 (grid) of 6SK7. Low side to chassis.	455KC	BC	High freq. (right) end.	Across voice coil	A1,A2	Adjust for maximum output
"	High side to pin #8 (grid) of 6SA7. Low side to chassis.	"	"	"	"	A3,A4	"
Repeat last two steps.							
	Loop	1700KC	BC	1700KC point on diffuser plate.	"	A5	Adjust for maximum output
	"	1400KC	BC	Tune for maximum output	"	A6,A7	"
	"	600KC	BC	"	"	A8	Rock variable and adjust for maximum output.
Repeat last three steps.							
	Loop	18.0MC	SW	18MC point on diffuser plate.	"	A9	Adjust for maximum output on second peak from completely closed position.
	"	18.0MC	SW	Tune for maximum output	"	A10,A11	Rock variable and adjust for maximum output.
	"	6.0MC	SW	"	"		Pointer should be at 6MC point on diffuser plate. If it is not, repeat last two steps.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SG7	6SG7	8BK	
2	Converter	6SA7	6SA7	8R	
3	IF Amp.	6SK7	6SK7	8N	
4	Det.-AVC-AF	6SQ7GT	6SQ7GT	8Q	
5	Power Output	6V6GT	6V6GT	7AC	
6	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: OLYMPIC PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	20	450	C0158	FP429	DY-3x15-450	EL-424	PRV450-10-10-10	BR2045	Filter - Blue
B	10	450					PRS450-10	BRL8145	" - Red
C	5	450							" - Green
D	50	25			M-50-25	TA-25*	PRS25-50	BR502	Cath. Bypass-Yellow
8	.05	400	RCP10W4503A	TP426	S-4-05	TC-15	484-05	DT4S5	Line Bypass
9	.1	400	RCP10W4104L	TP428	S-4-1	TC-1	484-.1	DT4P1	RF Bypass Pwr. Supp.
10	.001	600	RCP10W6102A	TP404	S-6-001	TC-21	684-001	DT6D1	Feedback
11	.005	600	RCP10W6502A	TP408	S-6-005	TC-25	684-005	DT6D5	Audio Coupling
12	.02	200	RCP10W2203A	TP423	S-4-02	TC-12	484-02	DT4S2	" "
13	.01	600	RCP10W6103A	TP410	S-6-01	TC-11	684-01	DT6S1	" "
14	.02	200	RCP10W2203A	TP423	S-4-02	TC-12	484-02	DT4S2	Audio Cath. Bypass
15	.01	600	RCP10W6103A	TP410	S-6-01	TC-11	684-01	DT6S1	IF Screen Bypass
16	.05	400	RCP10W4503A	TP426	S-4-05	TC-15	484-05	DT4S5	IF Cath. Bypass
17	.01	600	RCP10W6103A	TP410	S-6-01	TC-11	684-01	DT6S1	Conv. Plate Bypass
18	.01	600	RCP10W6103A	TP410	S-6-01	TC-11	684-01	DT6S1	Conv. Screen Bypass
19	.01	600	RCP10W6103A	TP410	S-6-01	TC-11	684-01	DT6S1	Conv. Cath. Bypass
20	.02	200	RCP10W2203A	TP423	S-4-02	TC-12	484-02	DT4S2	AVC Filter
21	.01	600	RCP10W6103A	TP410	S-6-01	TC-11	684-01	DT6S1	RF Screen Bypass
22	.01	600	RCP10W6103A	TP410	S-6-01	TC-11	684-01	DT6S1	RF Cath. Bypass
23	.006	600	RCP10W6602K	TP409	S-6-006	TC-26	684-006	DT6D6	Ant. Coupling
24	330	100	RCM40A331M	MC241	M0.5-33	MS-33	1468-0003	5W5T3	Tone Compensation
25	220	500	RCM20A221M	MC237	M0.5-32	1FM-32	1468-0002	5W5T2	Audio Plate Bypass
26	100	500	RCM20A101M	MC235	M0.5-31	1FM-31	1468-0001	5W5T1	Diode Filter
27	220	500	RCM20A221M	MC237	M0.5-32	1FM-32	1468-0002	5W5T2	" "
28	47	500	RCM20A470M	MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor
29	2700	300	RCM30B272J						Fixed Padder
30	1		C0311						Neutralizing
31	22	500	RCM20A220M	MC220	M0.5-425	MS-42	1468-000025	5W5Q2	RF Plate Bypass
32	100	500	RCM20A101M	MC235	M0.5-31	1FM-31	1468-0001	5W5T1	RF Coupling

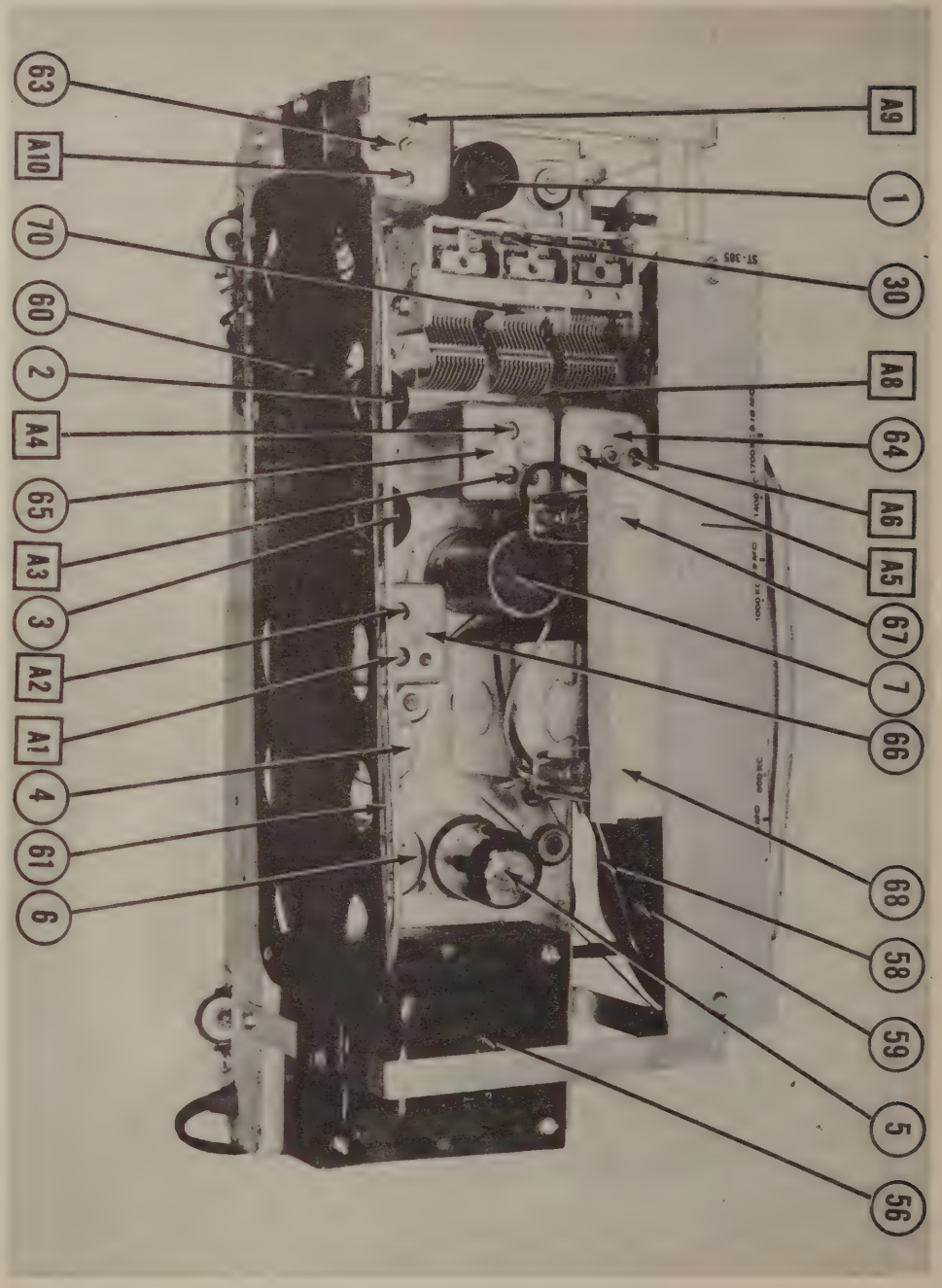
* Parallel with Bypass Section of EL Type

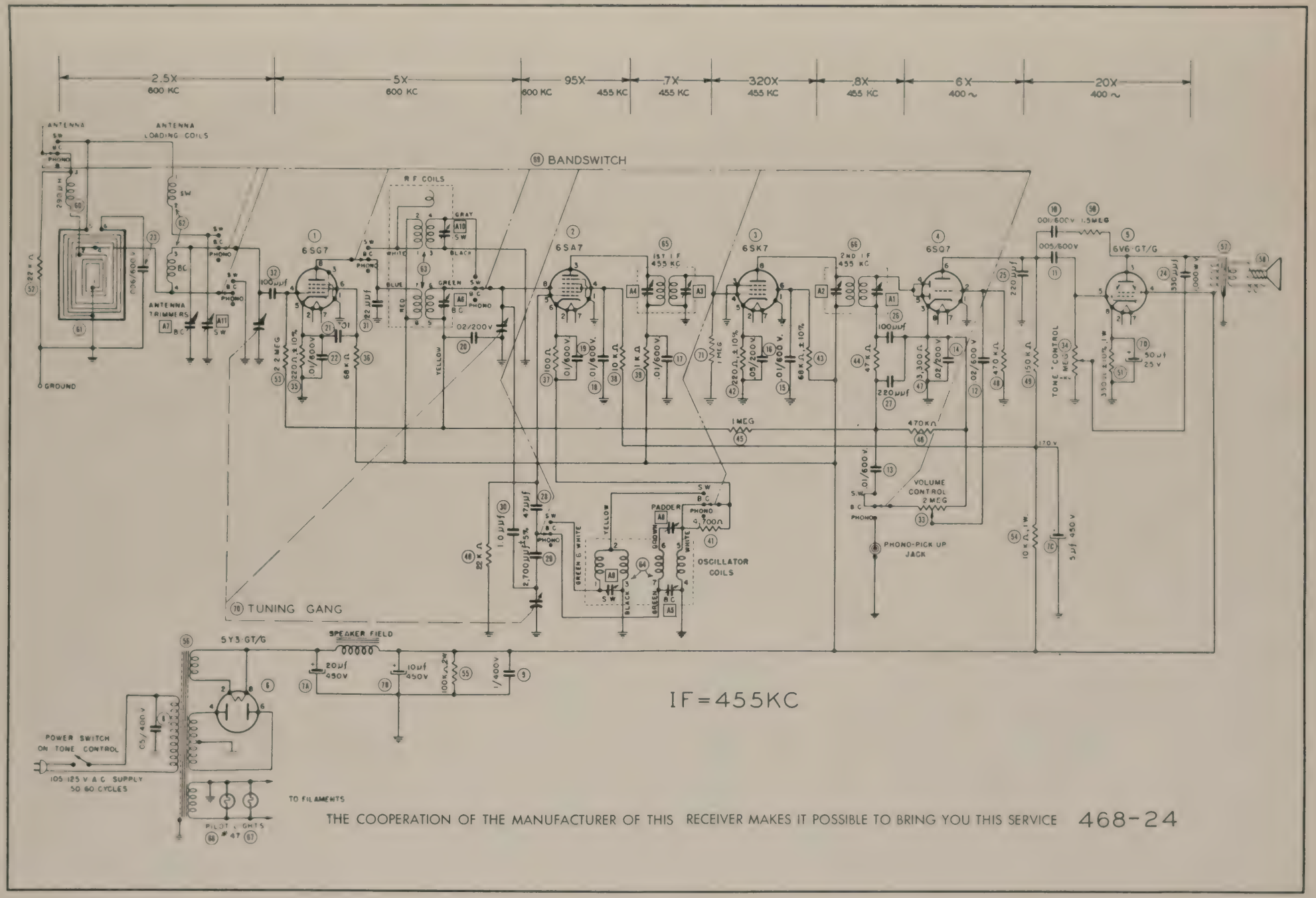
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: OLYMPIC PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
33A	2 Meg.	1	PT-239	MK403	D13-139	AM-66-Z	Volume Control See Note 1
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 33A per instructions
33A	2 Meg.	1	PT-435	MK403	D13-139	AM-66-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 33A per instructions
34A	500KΩ	1	PT-240	MK401	D13-133	AM-60-Z	Tone Control See Note 1
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 34A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
34A	500KΩ	1	PT-436	MK401	D13-133	AM-60-Z	Tone Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 34A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

Note 1. Used in Model 6-602 Wood Cabinet

CHASSIS—TOP VIEW





THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE 468-24

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is maximum operative and 3-volt battery bias substituted for measurement.

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
							Tone Control
			Not Req.				Attach to 53A per instructions
			"				" " " " "
							Mixer Control
		1	25000				Attach to 54A per instructions
			Not Req.				Mixer Control
		1	25000				Attach to 55A per instructions
			Not Req.				

R7-is is a three section volume control actuated by a [illegible].

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	PART No.	IRC PART No.	
				BTS-2.2 Meg.	Red-Red-Grn. AVC Network
				BTS-220K	Red-Red-Br. RF Cathode
				BTS-47K	Yl.-Vi.-Or. RF Primary Shunt
				BTS-100Ω	Br.-Blk.-Red RF Plate Decoupling
				BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
				BTS-1 Meg.	Br.-Blk.-Grn. Converter Grid
				BTS-22K	Red-Red-Or. Oscillator Grid
				BTS-2.2 Meg.	Red-Red-Grn. AVC Network
					Red-Red-Br. IF Cathode
					Grn.-Blue-Red Screen Dropping
					Red-Red-Yl. Diode Load
					Grn.-Blue.Or. Diode Load
				BTS-[illegible]	Br.-Blk.-Yl. Microphone Amplifier Plate Filter
				BTS-100K	Br.-Blk.-Yl. " " " Load
					Red-Red-Yl. Mixer Isolation
					Br.-Blk.-Grn. Microphone Amplifier Grid
				[illegible] MΩ	Red-Vi.-Red " " Cathode
				BTS-2700	Br.-Blk.-Or. " " "
				BTS-10K	Red-Red-Yl. Mixer Isolation
				BTS-220K	Yl.-Vi.-Yl. Expansion Bias Filter
				BTS-470K	Yl.-Vi.-Grn. 1st AF Grid
				BTS-4.7 Meg.	Grn.-Blue-Or. Voltage Divider Bias
				BTS-56K	Br.-Blk.-Yl. 1st AF Plate Decoupling
				BTS-100K	Red-Red-Yl. 1st AF Plate Load
				BTS-220K	Br.-Blk.-Grn. 1st AF Screen Dropping
				BTS-1 Meg.	Red-Red-Or. Expansion Amplifier Bleeder
				BTS-22K	Yl.-Vi.-Yl. Expansion Amplifier Screen Dropping
				BTS-470K	Red-Red-Yl. Expansion Amplifier Plate Load
				BTS-220K	Yl.-Vi.-Yl. Expansion Diode
				BTS-470K	Grn.-Blue-Or. Delayed Audio AVC.
				BTS-56K	Grn.-Blue-Br. " " "
				BTS-560	Yl.-Vi.-Grn. Audio AVC Load
				BTS-4.7 Meg.	Yl.-Vi.-Grn. Audio AVC Network
			73057	BTS-4.7 Meg.	Yl.-Vi.-Grn. Audio AVC Network
			73057	[illegible] Meg.	Yl.-Vi.-Grn. Expansion Diode Load
			73057	[illegible] Meg.	Or.-White-Br. Bias
			73040	[illegible]-560	Red-Vi.-Br. Bias
			73018	[illegible]-470	Yl.-Vi.-Red Bias
			73033	[illegible]	Speaker Mute
			73005	[illegible]	Br.-Red-Red Bias
				[illegible] 47Ω	Yl.-Vi.-Yl. Output Grid
				[illegible]	Red-Red-Yl. Output Grid
				[illegible]	Br.-Grn.-Br. Bias
				[illegible]	Br.-Grn.-Or. Tone Compensation
				[illegible]	[illegible]. Tone Compensation
				[illegible]	Red-Red-Yl. Compressor Diode Load
				[illegible]	Yl.-Vi.-Yl. Compressor Voltage Divider
				[illegible]	Br.-Blk.-Grn. Compressor Coupling
				[illegible]	Filter
				[illegible]	Yl.-Vi.-Br. Filter
				[illegible]	Cutter Head Shunt

CHASSIS—BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	PACKARD-BELL PART No.	STANCOR PART No.	THORDARSON PART No.	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible] @ 5A	[illegible]	P-6718	T-22R04	

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		PACKARD-BELL PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
T01	[illegible]	[illegible]	[illegible]	.5Ω	89400	A-22011*	T-22847		†Drill new mounting holes. *Use total primary winding.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			PACKARD-BELL PART No.	JENSEN PART No.		
[illegible]	[illegible]	[illegible]	[illegible]	SI-11[illegible] Mod. P6-A		Alternate Speaker
[illegible]	CONE DIA. [illegible]	[illegible]	CANNOT BE SPECIAL ADJUSTMENT FEATURE-ORDER FROM MANUFACTURER			

R F COILS

ITEM No	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	PACKARD-BELL PART No.	MEISSNER PART No.	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	BC Ant.Coil		4.5Ω	29400		
[illegible]	SW Ant.Coil		[illegible]	[illegible]		
114	BC RF Coil	57Ω	4Ω			
115	SW RF Coil	6Ω	0Ω			
116	BC Osc.Coil	1Ω	5.8Ω	29205	14-1040	
117	SW Osc.Coil		.2Ω	29201	14-1046	
118	Input IF	20.5Ω	20.1Ω		16-6658	
[illegible]	[illegible] IF	[illegible]	[illegible]		[illegible]	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					PACKARD-BELL PART No.		
[illegible]	[illegible]	6-8	[illegible]	[illegible]	[illegible]		Type 44

PARTS LIST AND DESCRIPTIONS (Continued)

MISCELLANEOUS

ITEM No.	PART NAME	PACKARD-BELL PART No.	NOTES
M1	PB Switch	[illegible]	Selector
M2	Switch	[illegible]	Band Change
M3	Tuning Cap.	[illegible]	2 gang variable
A5	Trimmer Cap. }	23401	{ BC Osc. Adj. 3-30 MMF.
A9	" " }		{ SW " " " "
A6	Padder Cap.	[illegible]	Osc. ind. [illegible] MMF.
A7	Trimmer Cap. }	23400A	{ BC RF Adj. 3-30 MMF.
A8	Trimmer Cap. }		{ BC Ant. Adj. [illegible] MMF.
A10	Trimmer Cap. }	[illegible]	{ SW RF Adj. [illegible] MMF.
A11	Trimmer Cap. }		{ SW Ant. Adj. [illegible] MMF.
	Cabinet	[illegible]	Wood. Fabrikoid covered
	Recording Head	36010	
	Cartridge	[illegible]	Recording
	Dial Scale	[illegible]	
	Knob	52001A	Round, Controls
	"	52014	Bar, Controls
	"	52023	Push Buttons
	Microphone	57001B	With Cable
	AC Motor	58001A	Recorder & Phono.
	Stylus	59002	
	Pick-up	63002A	Phono. Assy.
	Cartridge	[illegible]	Phono. Pick-up
	Plug	66005	Microphone
	Pointer Assy.	67001A	Dial Scale

DISASSEMBLY INSTRUCTIONS

1. Remove the four push-on type control knobs from dial.
2. Remove the five wood screws from the dial panel board.
3. Disconnect speaker plug from chassis.
4. Remove dial panel board and speaker from cabinet.
5. Disconnect the phono-pickup plug from chassis.
6. Disconnect the red and yellow antenna leads from terminal strip on [illegible].
7. Remove screw holding black ground lead to chassis. Remove lead.
8. Disconnect phono-motor plug from top of chassis.
9. Disconnect the recorder pickup arm plug lead from top of chassis.
10. Remove four wood screws and washers holding speaker to dial board. Remove speaker.

AUTOMATIC HOME RECORDING INSTRUCTIONS

1. How to Install Stylus (Recording Needle):

   (a) Between thumb and forefinger, pick up pointed end of stylus.
   (b) Rotate until a flat surface is noted at colored end opposite point.
   (c) Insert colored end of stylus as far as possible into recording head with flat surface facing the operator.
   (d) Firmly tighten set screw on front of recording head, thus holding stylus in position.

IMPORTANT: To insure consistently good quality in your home recordings, inspection of the action of recording stylus (needle) at frequent intervals is recommended. When in perfect condition, threads coming from the cutting will be about the thickness of a human hair. If cuttings become thin and broken, it would indicate stylus is worn and needs replacing. Another indication of a poor recording needle is failure of the pickup arm to stay in groove cut by recording needle.

2. How to Place a Recording Disc on Turntable:

   A recording disc has two holes - one fits over the center post and the other over a small locking pin about one inch from center hole. Place disc on turntable and rotate until locking pin slips into hole.

3. Cutter Depth Pressure:

   Cutter Depth Pressure has been pre-set at the factory to insure correct groove depth in cutting good home recordings. Under normal conditions, further adjustment is not necessary, however should an adjustment be required, it can be made by regulating the pressure adjustment disc located under the cutter arm.

   TURN DISC CLOCKWISE TO INCREASE THE CUTTING DEPTH.

   TURN DISC COUNTERCLOCKWISE TO DECREASE THE CUTTING DEPTH.

4. Methode of Recording:

   The "Inside to Out" professional type recording is used on these models.

   First place recording disc on turntable, making sure locking pin is in place; set pointer of automatic cutter left to correct record blank size, start turntable by pushing switch to "on" position; place cutter head about one-fourth inch from edge of label as starting point. Record is complete when recording needle reaches point one-fourth inch from outside edge of record. At this point cutter arm will contact automatic cutter lift, raise from recording and continue to travel outward to its permanent position.

HOLDING DEVICES

Holding Devices: Model 1052-A PhonOcord is a portable model, therefore it is necessary that certain movable parts be locked in place.

The Microphone is held in place by a spring which fits securely over the head of the instrument.

The Cutter Head is held by a small spring which fits over the adjustment screw of the recording needle.

All other parts are held automatically.

PACKARD-BELL
MODEL 1052

NOTE: VOLTAGE & RESISTANCE READINGS TAKEN IN STANDARD BROADCAST POSITION

VOLTAGE READINGS

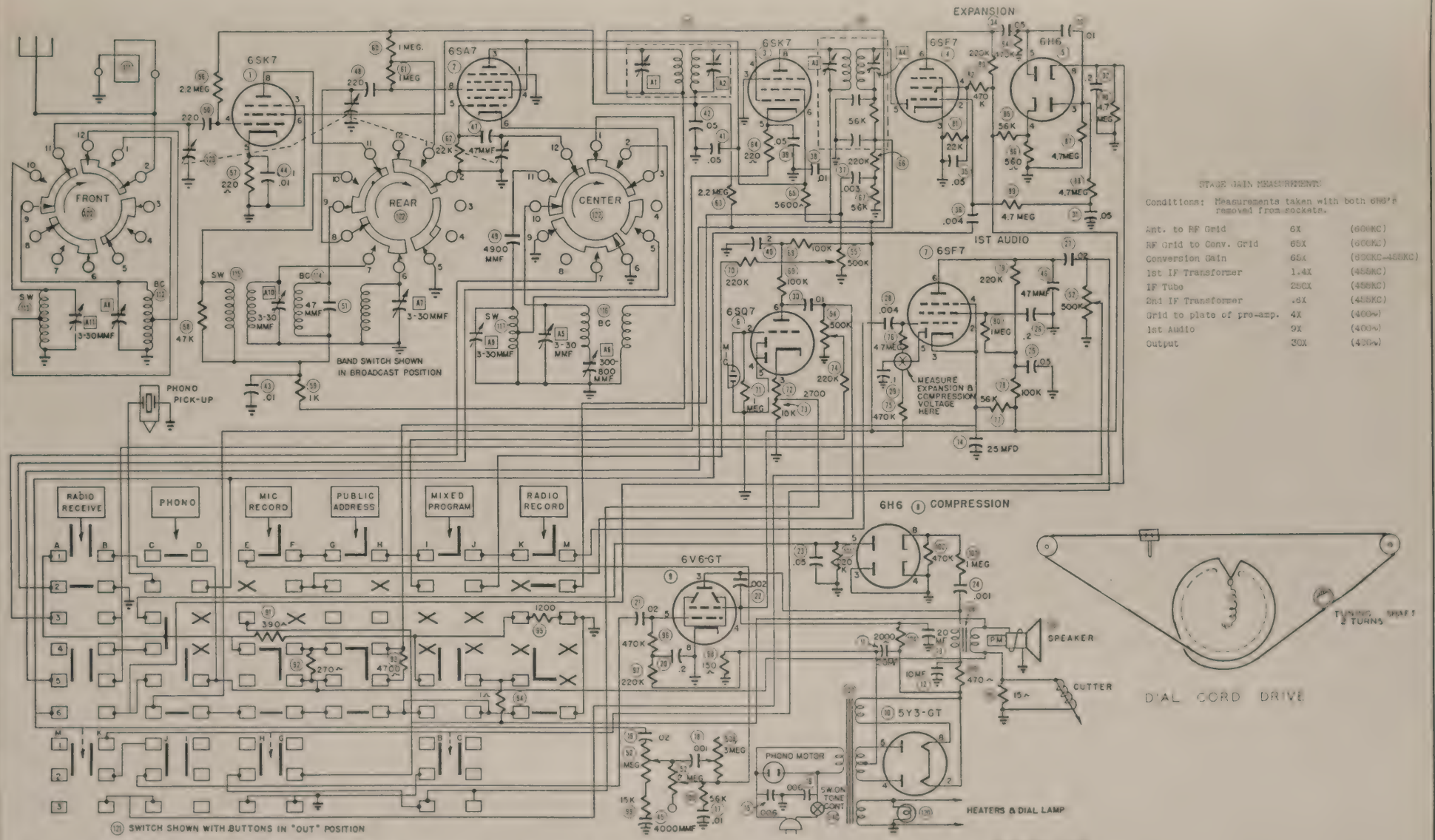
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0V.	0V.	0V.	0V.	2.2VDC	97VDC	6VAC	167VDC
2	6SA7	0V.	0V.	177VDC	97VDC	-3VDC	0V	6VAC	-4VDC
3	6SK7	0V.	0V.	0V.	-1VDC	2.3VDC	97VDC	6VAC	177VDC
4	6SF7	0V.	-25VDC	0V.	8.5VDC	-2VDC	115VDC	6VAC	0V
5	6A8	0V.	0V.	0V.	1.6VDC	0V.	0V.	6VAC	.2VDC
6	6SQ7	0V	0V.	2VDC	0V.	0V.	142VDC	6VAC	0V
7	6SF7	0V.	0V.	5.8VDC	3.8VDC	.1VDC	72VDC	6VAC	0V.
8	6H6	0V.	0V.	0V.	0V.	-.1VDC	.2VDC	6VAC	3VDC
9	6V6GT	0V.	0V.	227VDC	177VDC	-2.7VDC	-5VDC	6VAC	0V.
10	5Y3GT	0V	265VDC	0V.	270VAC	0V.	270VAC	0V.	265VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0Ω	0Ω	0Ω	4.5MEG	200Ω	30KΩ	.1Ω	26KΩ
2	6SA7	0Ω	0Ω	25KΩ	30KΩ	21KΩ	.7Ω	.1Ω	4MEG
3	6SK7	0Ω	0Ω	0Ω	2.5MEG	210Ω	30KΩ	.1Ω	25KΩ
4	6SK7	0Ω	12MEG	0Ω	22KΩ	290KΩ	255KΩ	.1Ω	0Ω
5	6H6	0Ω	0Ω	3.7MEG	500Ω	450KΩ	8MEG	.1Ω	3.5MEG
6	6SQ7	0Ω	1MEG	11KΩ	0Ω	0Ω	210K	.1Ω	0Ω
7	6SF7	0Ω	8MEG	1500Ω	1.1MEG	3.9MEG	330KΩ	.1Ω	0Ω
8	6H6	0Ω	0Ω	0Ω	0Ω	216KΩ	3.6MEG	.1Ω	430KΩ
9	6V6GT	0Ω	0Ω	25KΩ	25KΩ	700KΩ	245KΩ	.1Ω	0Ω
10	5Y3GT	INF	25KΩ	INF	250Ω	INF	250Ω	INF	25KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



STAGE GAIN MEASUREMENTS

Conditions: Measurements taken with both 6H6's removed from sockets.

Ant. to RF Grid	6X	(600KC)
RF Grid to Conv. Grid	65X	(600KC)
Conversion Gain	65X	(600KC-455KC)
1st IF Transformer	1.4X	(455KC)
IF Tube	250X	(455KC)
2nd IF Transformer	.8X	(455KC)
Grid to plate of pre-amp.	4X	(400~)
1st Audio	9X	(400~)
Output	30X	(400~)

IF=455KC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

468-26

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	PART No.	IRC PART No.	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Or.-Or.-Or. Conv. Screen Dropping
[illegible]	[illegible] Meg.	[illegible]	[illegible]	[illegible] Meg.	Red-Red-Grn. AVC Network
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Yl.-Vi.-Br. 1st IF Cathode
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Blue-Gray-Or. 1st IF Screen Dropping
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Yl.-Vi.-Or. IF Filter
[illegible]	4.7 Meg.	[illegible]	[illegible]	[illegible] Meg.	Yl.-Vi.-Grn. 1st AF Grid
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Red-Red-Red 1st AF Cathode
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Red-Red-Yl. 1st AF Plate Load
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Br.-Blk.-Yl. 1st AF Plate Filter
[illegible]	[illegible] Meg.	[illegible]	[illegible]	[illegible] Meg.	Red-Red-Grn. 1st AF Screen Dropping
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Yl.-Vi.-Yl. Output Grid
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Yl.-Vi.-Red Tone Compensation
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Grn.-Blue-Br. Tone Compensation
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Or.-Or.-Br. Output Bias

TRANSFORMER (POWER)

ITEM No	RATING				REPLACEMENT DATA			INSTALLATION NOTES
	PRI.	SEC. 1	SEC. 2	SEC. 3	[illegible] PART No.	STANCOR PART No.	THORDARSON PART No.	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]*	[illegible]*	*Drill new mounting holes.
	[illegible]	[illegible]	[illegible]	[illegible]				

TRANSFORMER (OUTPUT)

ITEM No	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		[illegible] PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		†Solder to bracket same as the original.
					504061				Used with speaker M-[illegible]
					[illegible]				" " " R-502168

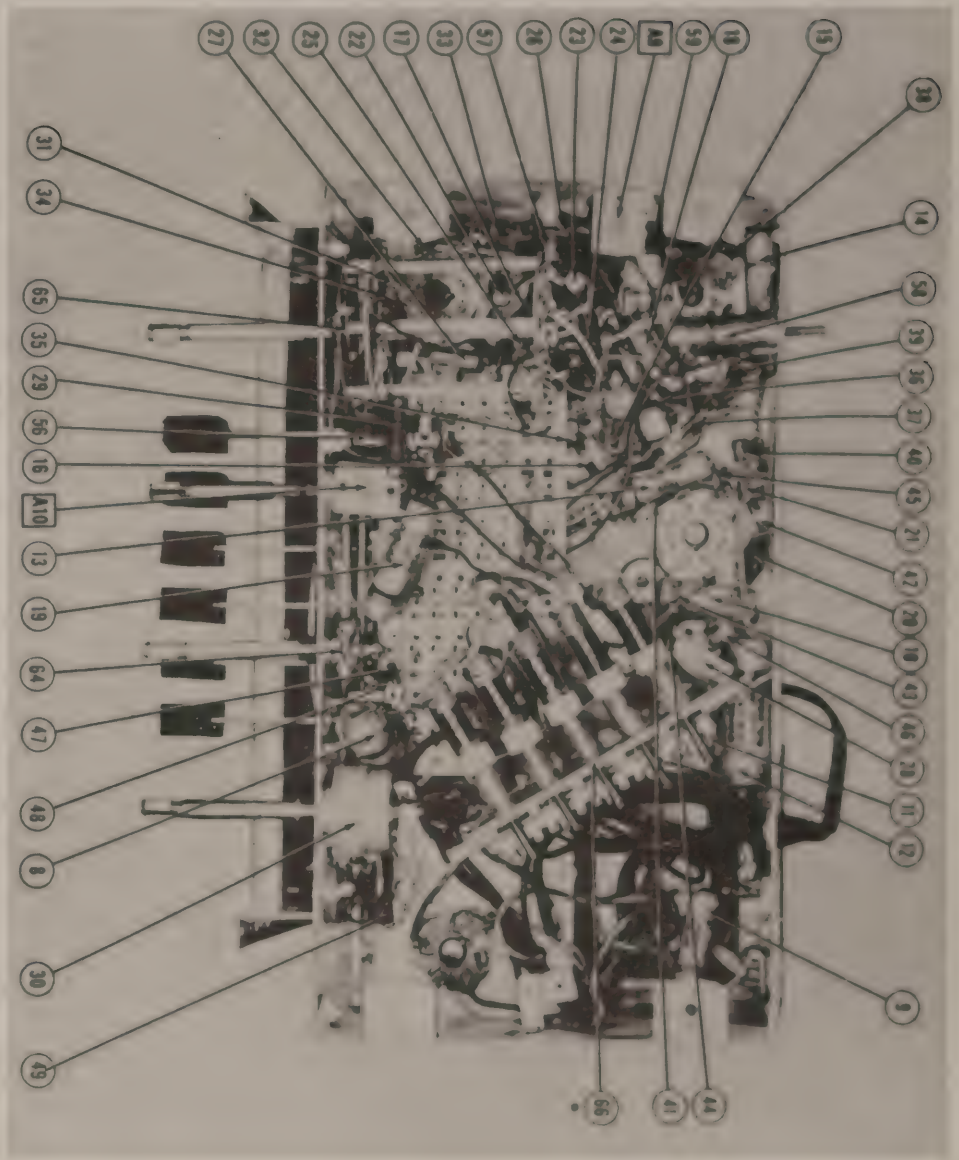
SPEAKER

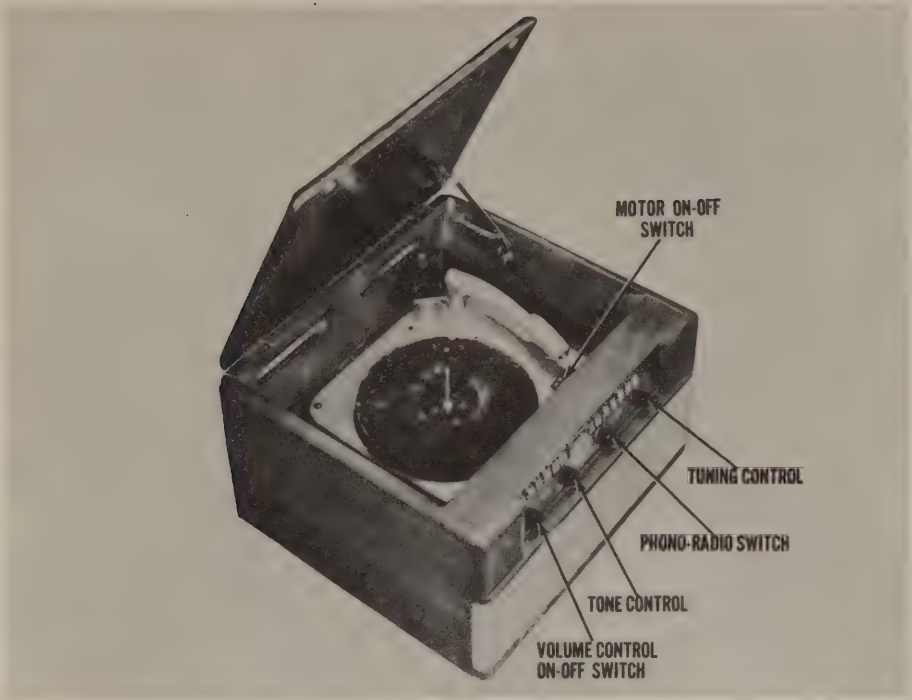
ITEM No	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			[illegible] PART No.	JENSEN PART No.		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
A	Trock	[illegible]	D-[illegible]	Mod. H-6E		Used with Output Transformer [illegible]
B	Speaker	[illegible]	M-[illegible]			" " " " 504061
C	[illegible]		R-[illegible]			" " " " 502170
[illegible]	[illegible]	[illegible]	[illegible]			
A	[illegible]	[illegible]	504[illegible]			
B	[illegible]	[illegible]	504[illegible]			Used with Speaker M-[illegible]
C	[illegible]	[illegible]	[illegible]			" " " R-502168

R F COILS

ITEM No	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	[illegible] PART No.	MEISSNER PART No.	
[illegible]	Loop Ant.	[illegible]	[illegible]	[illegible]		Used in models [illegible]
[illegible]	"	[illegible]	[illegible]	[illegible]		" " model [illegible]
[illegible]	R. Ant. Coil	[illegible]	[illegible]	[illegible]		
[illegible]	Osc. Ant. Coil	[illegible]	[illegible]	[illegible]		
[illegible]	R. RF Coil	[illegible]	[illegible]	[illegible]		
[illegible]	R. Osc. Coil	[illegible]	[illegible]	[illegible]		
[illegible]	Osc. Coil	[illegible]	[illegible]	[illegible]		
[illegible]	Input IF	[illegible]	[illegible]	[illegible]	16-6658	
[illegible]	Output IF	[illegible]	[illegible]	[illegible]	16-6[illegible]	

CHASSIS—BOTTOM VIEW





PACKARD-BELL MODEL 661

TRADE NAME	Packard-Bell Model 661
MANUFACTURER	Packard-Bell Co., 3443 Wilshire Blvd., Los Angeles, Calif.
TYPE SET	AC Operated Combination Automatic Phono. - Superheterodyne Receiver, Self Contained Loop Antenna
TUBES (SIX)	Types, 6SG7 RF Amp., 6SA7 Converter, 6SK7 IF Amp., 6SQ7 Det.-AVC-AF, 6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	110-120 Volts AC
TUNING RANGE—BROADCAST	540-1740KC RATING .430 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

Turn tuning control fully counter-clockwise and set pointers at last mark at left end of dials. Set volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. All adjustments are accessible with receiver mounted in cabinet and should be adjusted in cabinet to insure proper tracking. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.01 MFD.	High side to pin #8 (grid) of 6SA7. Low side to chassis.	455KC	540KC	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
	Loop	1740KC	High freq.end	"	A5	Connect output of signal generator to loop of a few turns of wire and radiate signal into receiver loop. Adjust for maximum output.
	"	600KC	600KC	"	A6	Adjust for maximum output. Reckeck A5 at 1740KC
	"	1500KC	Tune for maximum output.	"	A7,A8	Adjust for maximum output. Repeat last three steps for greater accuracy.

DISASSEMBLY INSTRUCTIONS

1. Remove the four push-on type control knobs and felt washers.
2. Remove the seven small wood screws holding the grill plate inside the cabinet. Remove plate.
3. Disconnect the phono-motor plug.
4. Disconnect the phono-pickup plug.
5. Disconnect the antenna plug.
6. Remove the eight wood screws holding chassis to cabinet.
7. Remove the two screw bolts holding chassis to cabinet. Remove chassis.
8. Remove four screws from speaker.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: PACKARD-BELL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SG7	6SG7	8BK	
2	Converter	6SA7	6SA7	8R	
3	IF Amp.	6SK7	6SK7	8N	
4	Det.-AVC-AF	6SQ7	6SQ7	8Q	
5	Power Output	6V6GT	6V6GT	7AC	
6	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PACKARD-BELL PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7	20	450	24001	TC75	M-20-450	UT-20	PRS450-20	BR2045	Filter
8	20	350	24003	TC65	M-20-350	UT-203	PRS450-20	BR2045	"
9	.02	600	23007	TP412	S-6-02	TC-12	684-02	DT6S2	Audio Coupling
10	.005	600	23004	TP408	S-6-005	TC-25	684-005	DT6D5	6V6 Plate Bypass
11	.01	400	23022	TP421	S-4-01	TC-11	484-01	DT4S1	Tone Compensation
12	.005	600	23004	TP408	S-6-005	TC-25	684-005	DT6D5	Audio Coupling
13	.05	400	23009	TP426	S-4-05	TC-15	484-05	DT4S5	Screen Bypass
14	.05	400	23009	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
15	.05	400	23009	TP426	S-4-05	TC-15	484-05	DT4S5	Plate Bypass
16	470	500		MC245	M0.5-35	MS-35	1468-0005	5W5T5	Phono Coupling
17	220	500	23228	MC237	M0.5-32	1FM-32	1468-0002	5W5T2	IF Bypass Diode
18	220	500	23228	MC237	M0.5-32	1FM-32	1468-0002	5W5T2	Audio Plate Bypass
19	47	500	23225	MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor
20	220	500	23228	MC237	M0.5-32	1FM-32	1468-0002	5W5T2	RF Coupling
21	47	500	23225	MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Fixed Trimmer
22	220	500	23228	MC237	M0.5-32	1FM-32	1468-0002	5W5T2	RF Coupling

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PACKARD-B. PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
23A	500KΩ	1	25003B	MR48	D13-133	M-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 23A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
24A	3 Meg.	1	25005A	MR57	D13-140	M-67-Z	Tone Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 24A per instructions

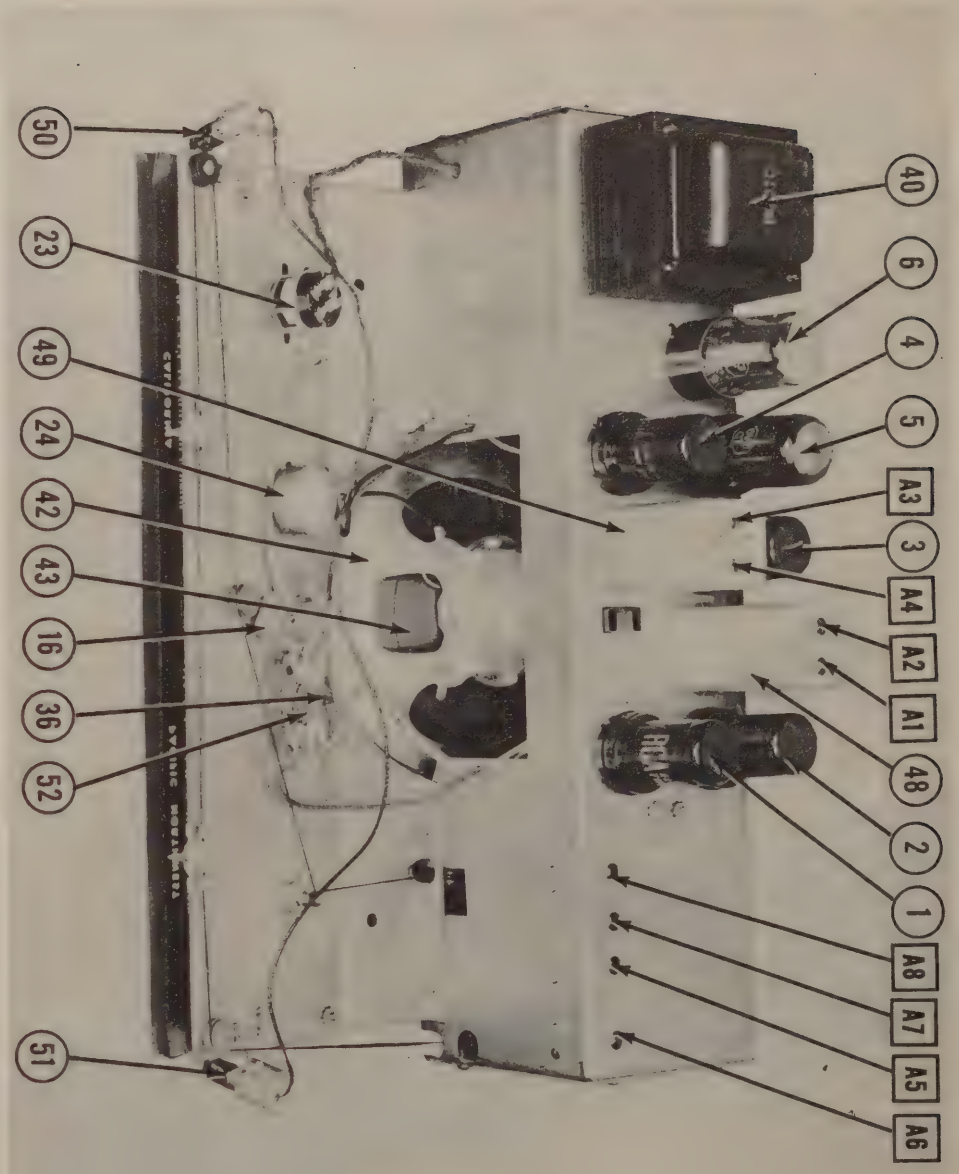
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PACKARD-BELL PART No.	IRC PART No.	IDENTIFICATION CODES
25	2.2 Meg.	½	73055	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
26	39Ω	½	73008	BW-½-39	Or.-White-Blk. RF Cathode
27	2.2 Meg.	½	73055	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
28	22KΩ	½	73041	BTS-22K	Red-Red-Or. Oscillator Grid
29	390Ω	½	73020	BW-½-390	Or.-white-Br. IF Cathode
30	1 Meg.	½	73053	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
31	39Ω	½	73008	BW-½-39	Or.-White-Blk. 1st AF Cathode
32	4.7 Meg.	½	73057	BTS-4.7 Meg.	Yl.-Vi.-Grn. 1st AF Grid
33	220KΩ	½	73049	BTS-220K	Red-Red-Yl. 1st AF Plate Load
34	470KΩ	½	73051	BTS-470K	Yl.-Vi.-Yl. Output Grid
35	470Ω	½	73021	BTS-470	Yl.-Vi.-Br. Feedback
36	220KΩ	½	73049	BTS-220K	Red-Red-Yl. Series Phono.
37	10KΩ	2	73125	BT-2-10K	Br.-Blk.-Or. Screen Dropping
38	150Ω	1	73081	BT-1-150	Br.-Grn.-Br. Bias
39	2KΩ	5		AB-10K	Filter

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: PACKARD-BELL PART No.	STANCOR PART No.	THORDARSON PART No.	INSTALLATION NOTES
40	117VAC @ .430A	540VCT @ .056A	5.0 VAC @ 1.8A	5.9VAC @ 2A	89010	P-6119*	T-22R01	*Add resistor to reduce plate voltage if necessary.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA PACKARD-BELL PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDAR'N PART No.	REPLACEMENT DATA	INSTALLATION NOTES
41	6800Ω	3.9Ω	770Ω	.7Ω	89409	A-38781	T-225471		†Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA PACKARD-BELL PART No.	REPLACEMENT DATA JENSEN PART No.	REPLACEMENT DATA	INSTALLATION NOTES
	FIELD	VC IMP.		ST-110		
42	PM	3.9Ω	83303	Mod. P6-V		
	CONE DIA.	VC DIA.				
43	6-3/8"	1/2"	CONE HAS SPECIAL ADJUSTMENT FEATURE-ORDER FROM MANUFACTURER			

R F COILS

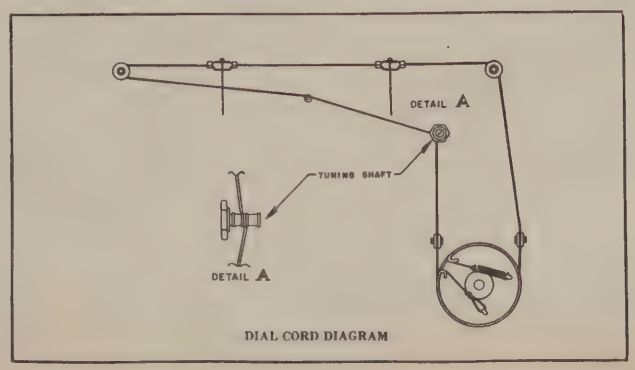
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA PACKARD-BELL PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
44	Loop Ant.	0Ω		29305		
45	Ant. Coil	.6Ω	2.8Ω	29403		
46	RF Coil	58Ω	31Ω	29102A	14-1027	
47	Osc. Coil	.8Ω	5.8Ω	29205	14-1040	
48	Input IF	17Ω	16.5Ω	29004D	16-6658	
49	Output IF	16Ω	16Ω	29001D	16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA PACKARD-BELL PART No.	REPLACEMENT DATA	INSTALLATION NOTES
50	Bayonet	6-8	0.25	Blue	54001		Type 44
51	Bayonet	6-8	0.25	Blue	54001		" "

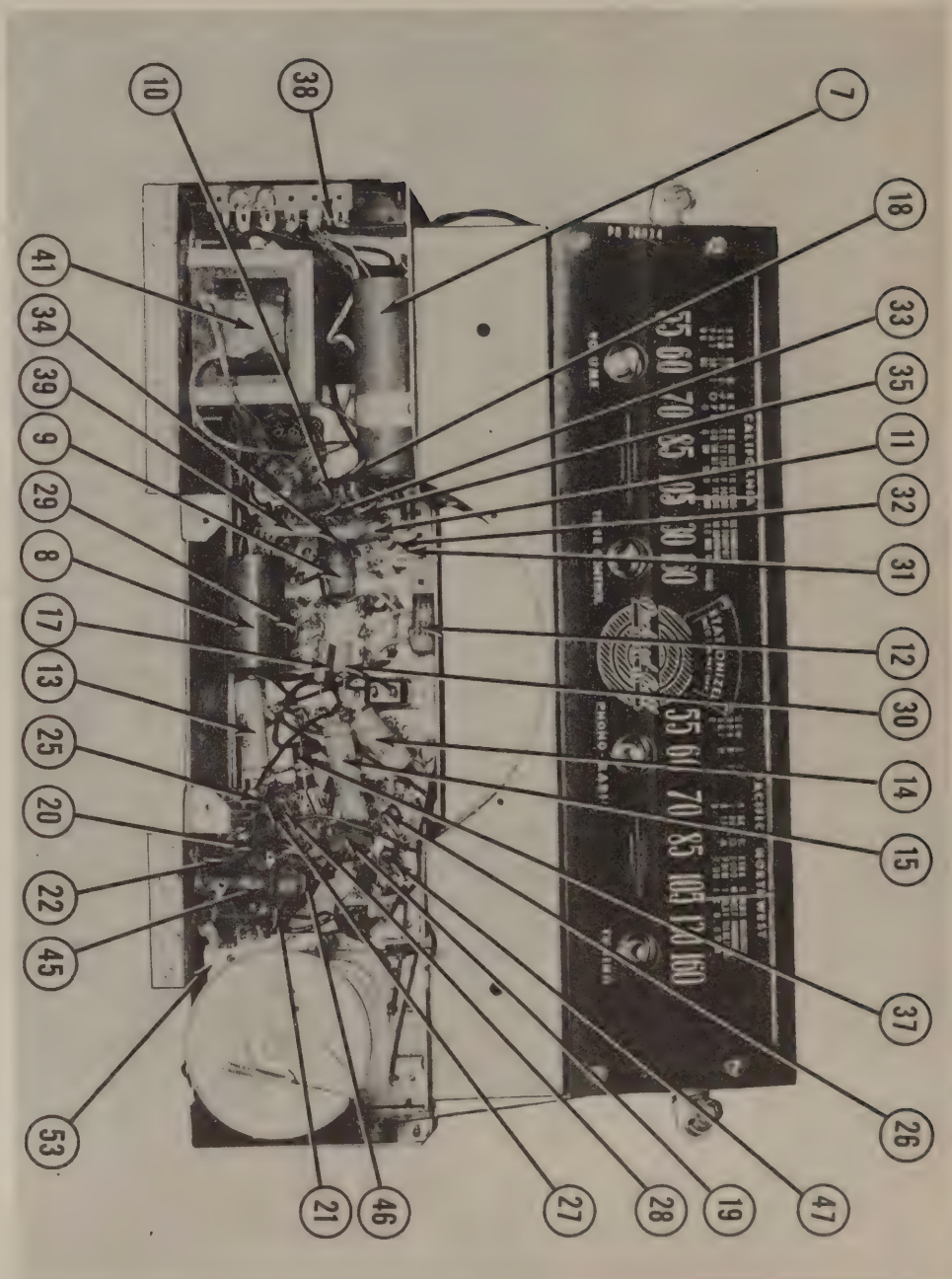
MISCELLANEOUS

ITEM No.	PART NAME	PACKARD-BELL PART No.	NOTES
52	Switch	86008	Radio-Phono
53	Tuning Cap.	23500C	3 Gang Variable Cap.
A5	Trimmer Cap.	23406	Osc. Adj. 3-30 MMF.
A6	Padder Cap.	23402	" Pad 300-800 MMF.
A7	Trimmer Cap.	23400A	RF Adj. 3-30 MMF.
A8			Ant. Adj. 3-30 MMF.
	Dial Scale	38024	
	Knob	52025	Plastic
	Panel, Dial	62020A	
	Pointer, Slide	67002	
	" , Wire	67009	

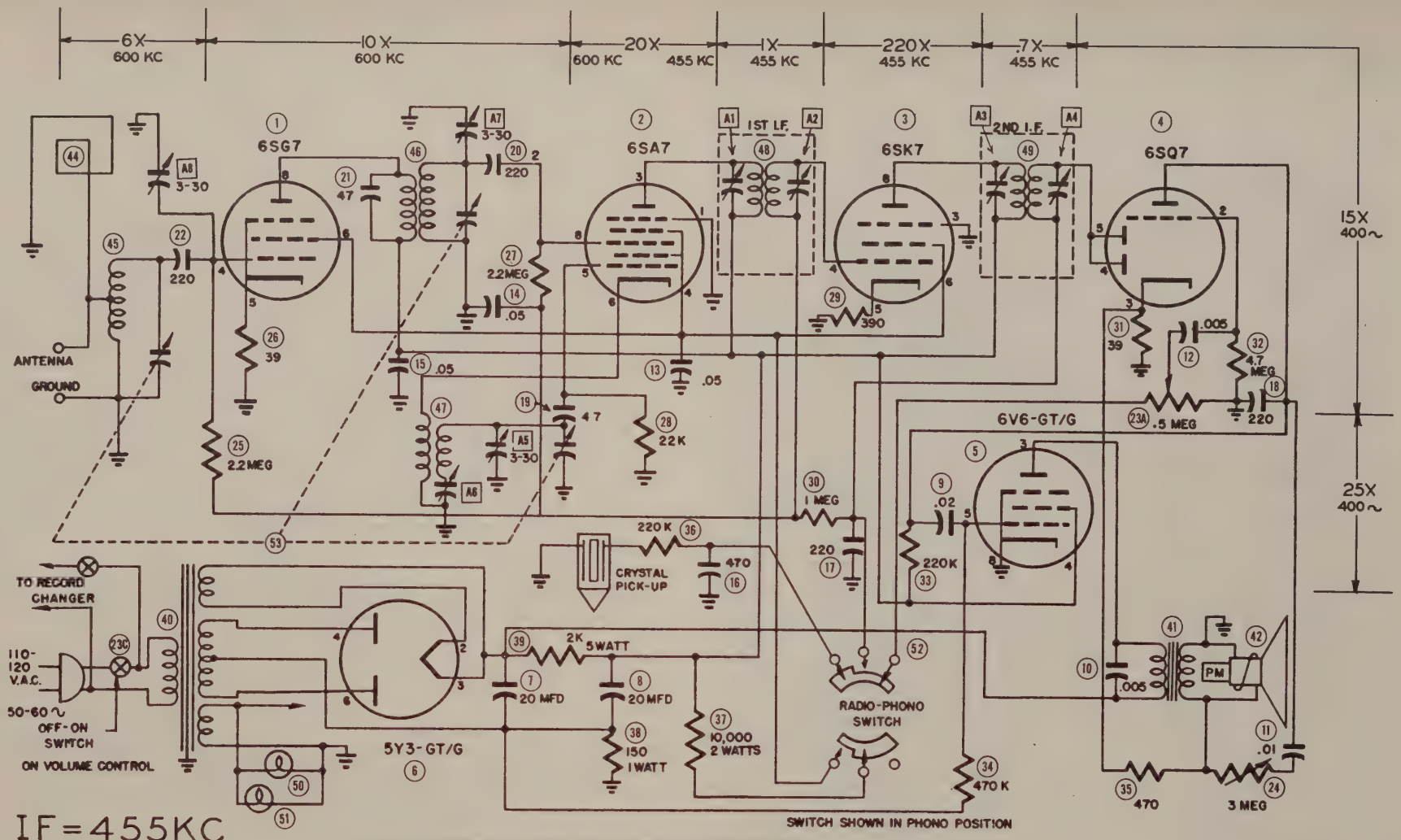


DIAL CORD DIAGRAM

CHASSIS—BOTTOM VIEW



PACKARD-BELL MODEL 661



NOTE: VOLTAGE & RESISTANCE READINGS TAKEN IN RADIO POSITION

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SG7	0V.	0V.	.3V.DC	-2V.DC	.3V.DC	85V.DC	5,7V.AC	197V.DC
2	6SA7	0V.	0V.	197V.DC	85V.DC	-25V.DC	0V.	5,7V.AC	-3V.DC
3	6SK7	0V.	0V.	0V.	-2V.DC	2.4V.DC	85V.DC	5,7V.AC	197V.DC
4	6SQ7	0V.	-57V.DC	0V.	-5V.DC	-5V.DC	99V.DC	5.7V.AC	0V.
5	6V6GT	0V.	0V.	220V.AC	197V.DC	-3.6V.DC	-8.2V.DC	5.7V.AC	0V.
6	5Y3GT	0V.	255V.DC	250V.	260V.AC	0V.	260V.AC	0V.	255V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SG7	0Ω	0Ω	37Ω	3.5MEG	37Ω	140KΩ	.2Ω	130KΩ
2	6SA7	0Ω	0Ω	130KΩ	140KΩ	19.5KΩ	.5Ω	.2Ω	3.7MEG
3	6SK7	0Ω	0Ω	0Ω	1.2MEG	370Ω	140KΩ	.2Ω	130KΩ
4	6SQ7	0Ω	4.5MEG	34Ω	410KΩ	410KΩ	350KΩ	.2Ω	0Ω
5	6V6GT	0Ω	0Ω	130KΩ	130KΩ	370KΩ	130Ω	.2Ω	0Ω
6	5Y3GT	INF	130KΩ	INF	290Ω	INF	300Ω	.5Ω	130KΩ

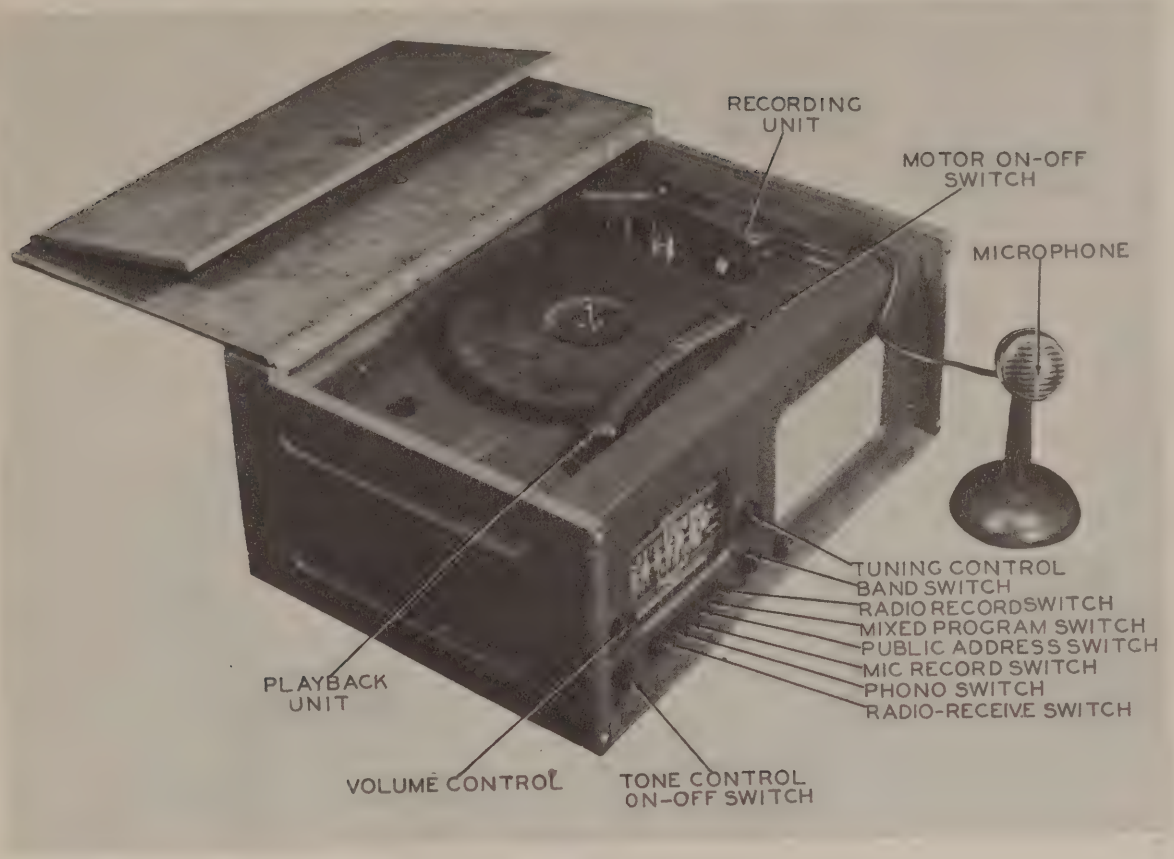
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

468-25

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



PACKARD-BELL MODEL 1052A

TRADE NAME	Packard-Bell Models 1052, 1052A
MANUFACTURER	Packard-Bell Co., 3443 Wilshire Blvd., Los Angeles, California
TYPE SET	Phono.-Recorder-PA System - 2 Band Superheterodyne Receiver, Self Contained Loop Ant.
TUBES (TEN)	Types, 6SK7 RF Amp., 6SA7 Converter, 6SK7 IF Amp., 6SF7 2nd Det.-Exp. Amp., 6H6 Exp. Rect. & Delayed Audio AVC, 6SQ7 Mic. Amp., 6SF7 1st AF, 6H6 Compression Rect., 6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	110-120 Volts AC — RATING. .570 Amps. @ 117V AC
TUNING RANGE—BROADCAST	540-1740KC — SHORT WAVE 6.0-18.0MC

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer at last reference mark at left end of dial. Set volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. For alignment of the r-f sections connect the output of the signal generator to two turns of wire approximately 12 inches in diameter. Place in line with and about two feet from the receiver loop. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.01 MFD	High side to pin #8 of 6SA7. Low side to chassis.	455KC	BC	540KC	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output
	Loop	1750KC	"	1750KC (Variable fully open)	"	A5	" " " "
	"	600KC	"	600KC	"	A6	" " " "
	"	1500KC	"	Tune for maximum output.	"	A7,A8	" " " "
Repeat last three steps.							
	Loop	18.0MC	SW	18MC	"	A9	" " " "
	"	15.0MC	"	Tune for maximum output.	"	A10,A11	Rock variable and adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: PACKARD-BELL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SK7	6SK7	8N	
2	Converter	6SA7	6SA7	8R	
3	IF Amp.	6SK7	6SK7	8N	
4	2nd Det.-Exp. Amp.	6SF7	6SF7	7AZ	
5	Exp. Rect.-Delayed Audio AVC	6H6	6H6	7Q	
6	Mic. Amp.	6SQ7	6SQ7	8Q	
7	1st AF	6SF7	6SF7	7AZ	
8	Compression Rect.	6H6	6H6	7Q	
9	Power Output	6V6GT	6V6GT	7AC	
10	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

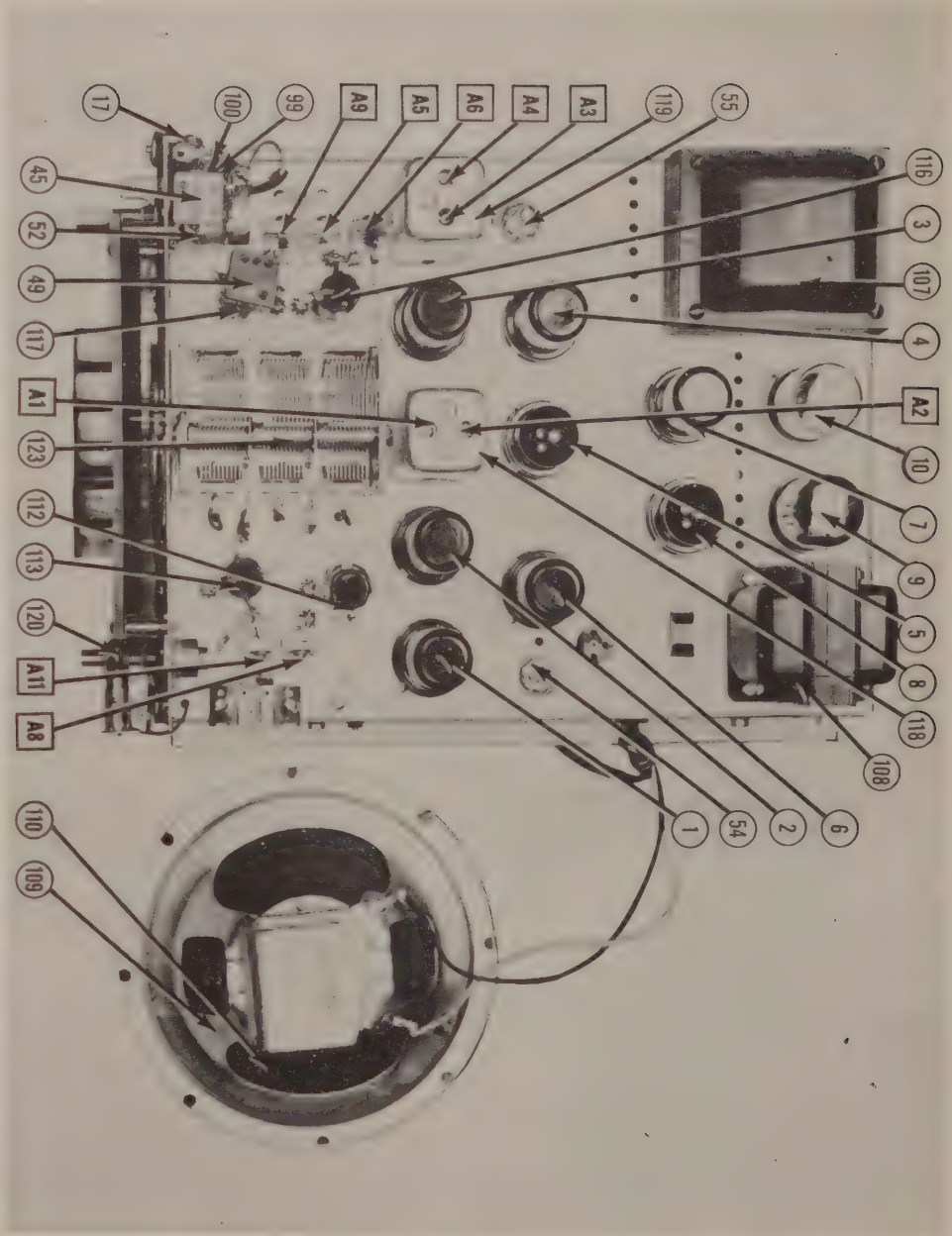
Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PACKARD-BELL PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
11	20	450	24001	TC75	M-20-450	UT-20	PRS450-20	BR2045	Filter
12	10	450	24002	TC72	M-10-450	UT-12	PRS450-10	BR1045	"
13	20	450	24001	TC75	M-20-450	UT-20	PRS450-20	BR2045	"
14	20	25	24006	TC26	M-25-25	TA-25	PRS25-25	BR202A	Cath. Bypass
15	.006	600	23901	TP409	S-6-006	TC-26	684-006	DT6D6	Line Bypass
16	.006	600	23901	TP409	S-6-006	TC-26	684-006	DT6D6	" "
17	.01	600	23006	TP410	S-6-01	TC-11	684-01	DT6S1	Tone Compensation
18	.001	600	23001	TP404	S-6-001	TC-21	684-001	DT6D1	" "
19	.02	600	23007	TP412	S-6-02	TC-12	684-02	DT6S2	Audio Coupling
20	.2	200	23018	TP429	S-4-2	TC-2	484-.2	DT4P2	Bias Filter
21	.02	600	23007	TP412	S-6-02	TC-12	684-02	DT6S2	Audio Coupling
22	.002	600	23002	TP405	S-6-002	TC-22	684-002	DT6D2	6V6 Plate Bypass
23	.05	200	23017	TP426	S-4-05	TC-15	484-05	DT4S5	Compression Filter
24	.001	600	23001	TP404	S-6-001	TC-21	684-001	DT6D1	Compression Coupling
25	.05	200	23017	TP426	S-4-05	TC-15	484-05	DT4S1	6SF7 Plate Decoupling
26	.2	200	23018	TP429	S-4-2	TC-2	484-.2	DT4P2	6SF7 Screen Bypass
27	.02	600	23007	TP412	S-6-02	TC-12	684-02	DT6S2	Audio Coupling
28	.004	600	23003	TP404	S-6-004	TC-24	684-004	DT6D4	" "
29	.1	200	23019	TP429	S-4-1	TC-1	484-.1	DT4P1	Grid Filter
30	.01	600	23006	TP410	S-6-01	TC-11	684-01	DT6S1	Audio Coupling
31	.05	200	23017	TP426	S-4-05	TC-15	484-05	DT4S5	Audio AVC Filter
32	.2	200	23018	TP428	S-4-2	TC-2	484-.2	DT4P2	Expander Filter
33	.01	600	23006	TP410	S-6-01	TC-11	684-01	DT6S1	Audio Coupling
34	.05	600	23010	TP415	S-6-05	TC-15	684-05	DT6S5	Expander Coupling
35	.05	600	23010	TP415	S-6-05	TC-15	684-05	DT6S5	6SF7 Screen Bypass
36	.004	600	23003	TP407	S-6-004	TC-24	684-004	DT6D4	Audio Coupling
37	.003	600	23016	TP406	S-6-003	TC-23	684-003	DT6D3	" "
38	.01	600	23006	TP410	S-6-01	TC-11	684-01	DT6S1	IF Plate Bypass
39	.05	600	23010	TP415	S-6-05	TC-15	684-05	DT6S5	IF Cath. Bypass
40	.2	200	23016	TP428	S-4-2	TC-2	484-.2	DT4P2	Mic. Amp. Plate Decoup.
41	.05	600	23010	TP415	S-6-05	TC-15	684-05	DT6S5	Screen Bypass
42	.05	600	23010	TP415	S-6-05	TC-15	684-05	DT6S5	AVC Filter
43	.01	600	23006	TP410	S-6-01	TC-11	684-01	DT6S1	RF Plate Bypass
44	.01	600	23006	TP410	S-6-01	TC-11	684-01	DT6S1	RF Cath. Bypass
45	4000	500		MC463	MW.5-24	MS-24	1467-004	1D5D4	Tone Compensation
46	47	500	23225	MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	1st Audio Plate Bypass
47	47	500	23225	MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor
48	220	500	23206	MC237	MO.5-32	1FM-32	1468-0002	5W5T2	RF Coupling
49	4900	300	23207A	MC465	MW.5-25	MS-25	1467-005	1D5D5	Fixed Padder
50	220	500	23206	MC237	MO.5-32	1FM-32	1468-0002	5W5T2	RF Coupling
51	47	500	23225	MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	Fixed Trimmer

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PACK.-BELL PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
52A	1 Meg.	1	25500A#				Volume Control Front Section.
B	2 Meg.	1					" " Center "
C	500KΩ	1					" " Rear "

CHASSIS—TOP VIEW



DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA STEWART-WAR. PART No.		INSTALLATION NOTES
62	Bayonet	6-8	0.25	Blue	110628		Type 44
63	Bayonet	6-8	0.25	Blue	110629		Type 44

MISCELLANEOUS

ITEM No.	PART NAME	STEWART-WARNER PART No.	NOTES
64	Tone Switch	502146	
65	Band Switch	502147	
66	PB Assembly	502025	Complete Coil & Trimmer Assby. For Automatic Tuning.
67	Tuning Cap.	502122	3 Gang Variable Cap.
	PB Switch	502177	
A9	Trimmer Cap.	502171	SW Osc. Adj. 5-35 MMFL.
A10	" "	502172	SW Ant. Adj. 25-100 MMFD.
	Coil	502907	PB Tuning (540-1000KC)
	"	502908	" " (650-1300KC)
	"	502909	" " (975-1600KC)
	Dial Scale	502219	Glass
	Knob	501449	Volume or Tuning (9001C)
	"	501455	Tone or Band Sw. (9001C)
	"	501498	Volume or Tuning (9001D, E, F)
	"	501499	Tone or Band Sw. " "
	Push Button	501497	(Model 9001C)
	"	501681	(Model 9001D, E, F)
	Pointer	502601	

PUSH BUTTON ADJUSTMENTS

The five push buttons from left to right (facing front of receiver) cover the following frequencies in order:

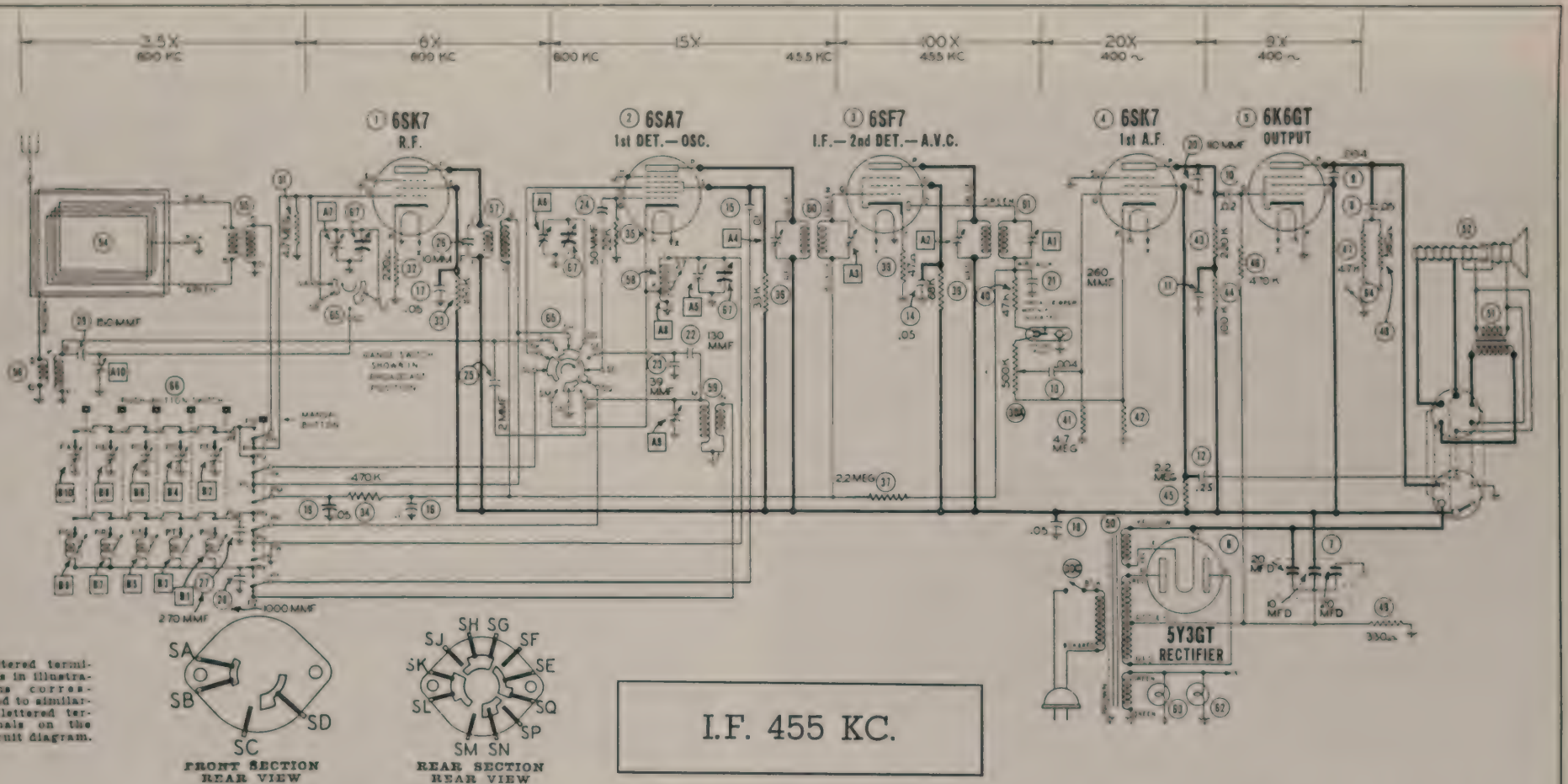
540 to 1000KC, 650 to 1300KC, 650 to 1300KC, 975 to 1600KC, 975 to 1600KC.

To set the individual push buttons on the desired stations proceed as follows:

1. Select a station within the frequency range of B1 and B2 (540 to 1000KC) and tune in the station using manual tuning.
2. Press in push button corresponding to B1 and B7 which is the one on the left (facing front of receiver).
3. Adjust B1 to tune in the desired station. Turning the adjustment counter-clockwise increases the frequency.
4. Adjust B2 for maximum volume of the selected station.
5. Proceed in the same order in setting the remaining push buttons. Always select a station within the frequency range of the corresponding push button adjustments. B4, B5, B7 and B8 are adjusted to tune in station. B4, B6, B8 and B10 are adjusted for maximum volume of selected station.

DISASSEMBLY INSTRUCTIONS

1. Remove the four push-on type control knobs and felt washers.
2. Remove five Phillips head screws from cabinet back cover. Remove cover.
3. Disconnect blue and green leads from loop antenna.
4. Remove Phillips head screw holding brown antenna lead to loop antenna. Remove lead.
5. Remove push-on type black lead clip from loop antenna.
6. Remove three Phillips head wood screws holding loop antenna to cabinet. Remove loop ant.
7. Remove four hex nuts and washers holding speaker to cabinet.
8. Disconnect speaker plug from chassis by removing set screw.
9. Remove speaker from cabinet.
10. Remove four hex head machine screws and washers holding chassis to cabinet. Remove chassis.



BAND SWITCH
502147

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

BC. ANTENNA COUPLING COIL 502112

R.F. COIL 502113

BC. OSCILLATOR COIL 502114

S.W. OSCILLATOR COIL 502111

S.W. ANTENNA COIL 502110

PUSH-BUTTON SWITCH 502177

468-29

The voltage gain measurements below listed above are approximate values for an average receiver of this type, taken under conditions as follows. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such, as, type of equipment used for measuring, reading and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. The following procedure should be observed in making voltage gain measurements for this set.

1 - Use the 600KC signal with 400-cycle modulation connected as shown. (Use lower frequency if local station interferes.)
2 - For RF and IF measurements connect negative terminal of 4-volt battery to AVC lead and positive terminal to B-. IMPORTANT - Disconnect battery when measuring audio stage gains.
3 - Be sure receiver is carefully tuned to generator signal. (Use weak signal, for many ratings.)

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0V.	6.2 V.AC	0V.	0V.	1.4 V.DC	58 V.DC	0V.	238 V.DC
2	6SA7	0V.	6.2 V.AC	238 V.DC	70 V.DC	−3 V.DC	0V.	0V.	−.2 V.DC
3	6SF7	0V.	−.2 V.DC	.5 V.DC	72 V.DC	0V.	238 V.DC	0V.	6.2 V.DC
4	6SK7	0V.	6.2 V.DC	0V.	0V.	1.35 V.DC	20 V.DC	0V.	83 V.DC
5	6K6GT	0V.	6.2 V.DC	223 V.DC	238 V.DC	−2.1 V.DC	−19 V.DC	0V.	0V.
6	5Y3GT	0V.	305 V.DC	0V.	310 V.AC	0V.	310 V.AC	0V.	305 V.DC

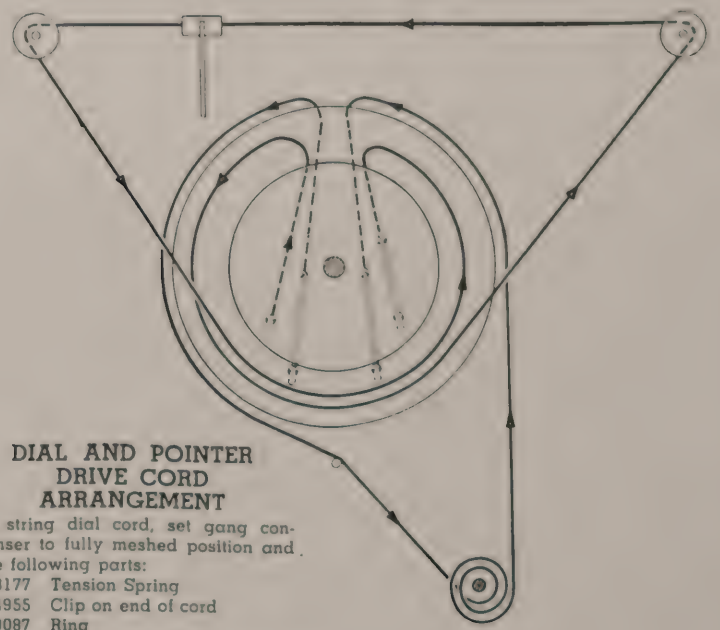
NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN "STANDARD BROADCAST POSITION."

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0Ω	.1Ω	0Ω	1.9MEG.	185Ω	295KΩ	0Ω	195KΩ
2	6SA7	0Ω	.1Ω	195KΩ	228KΩ	18KΩ	.5Ω	0Ω	1.8MEG.
3	6SF7	0Ω	1.8MEG.	44Ω	260KΩ	360KΩ	195KΩ	0Ω	.1Ω
4	6SK7	0Ω	.1Ω	0Ω	4MEG.	2.2KΩ	2.4MEG.	0Ω	515KΩ
5	6K6GT	INF.	.1Ω	195KΩ	195KΩ	480KΩ	300Ω	0Ω	0Ω
6	5Y3GT	INF.	195 KΩ	INF.	450Ω	INF.	460Ω	INF.	195KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connection are shown as bottom view.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage measure
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



DIAL AND POINTER DRIVE CORD ARRANGEMENT

To string dial cord, set gang condenser to fully meshed position and use following parts:

113177 Tension Spring
114955 Clip on end of cord
119087 Ring
117057 Cord (61 inches)
34 inches for pointer drive
27 inches for tuning drive

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

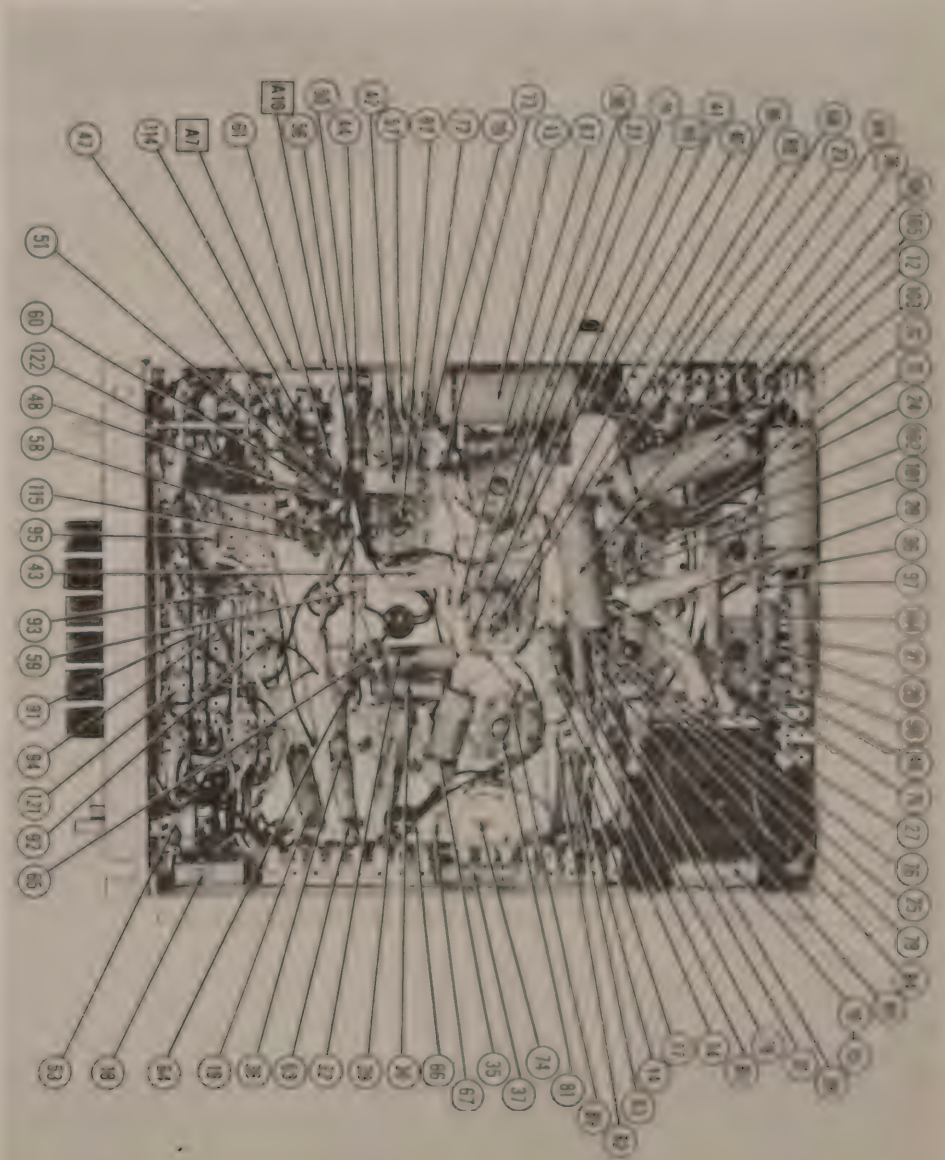
ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Tone Control
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Attach to 53A per instructions
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	" " " " "
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Mixer Control
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Attach to 54A per instructions
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Mixer Control
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Attach to 55A per instructions

[illegible]

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA PACKARD-BELL PART No.	REPLACEMENT DATA IRC PART No.	IDENTIFICATION CODES
[illegible]	[illegible]	[illegible]	[illegible]	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
[illegible]	[illegible]	[illegible]	73017	BTS-220K	Red-Red-Br. RF Cathode
[illegible]	[illegible]	[illegible]	73045	BTS-47K	Yl.-Vi.-Or. RF Primary Shunt
[illegible]	[illegible]	[illegible]	73025	BTS-1000	Br.-Blk.-Red RF Plate Decoupling
[illegible]	[illegible]	[illegible]	73053	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
[illegible]	[illegible]	[illegible]	73053	BTS-1 Meg.	Br.-Blk.-Grn. Converter Grid
[illegible]	[illegible]	[illegible]	73041	BTS-22K	Red-Red-Or. Oscillator Grid
[illegible]	[illegible]	[illegible]	73055	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
[illegible]	[illegible]	[illegible]	73017	BTS-220K	Red-Red-Br. IF Cathode
[illegible]	[illegible]	[illegible]	73127	BT-2-5600	Grn.-Blue-Red Screen Dropping
[illegible]	[illegible]	[illegible]	73049	BTS-220K	Red-Red-Yl. Diode Load
[illegible]	[illegible]	[illegible]	73060	BTS-56K	Grn.-Blue.Or. Diode Load
[illegible]	[illegible]	[illegible]	73047	BTS-100K	Br.-Blk.-Yl. Microphone Amplifier Plate Filter
[illegible]	[illegible]	[illegible]	73047	BTS-100K	Br.-Blk.-Yl. " " " Load
[illegible]	[illegible]	[illegible]	73049	BTS-220K	Red-Red-Yl. Mixer Isolation
[illegible]	[illegible]	[illegible]	73053	BTS-1 Meg.	Br.-Blk.-Grn. Microphone Amplifier Grid
[illegible]	[illegible]	[illegible]		BTS-2700	Red-Vi.-Red " " Cathode
[illegible]	[illegible]	[illegible]		BTS-1CK	Br.-Blk.-Or. " " "
[illegible]	[illegible]	[illegible]	73049	BTS-220K	Red-Red-Yl. Mixer Isolation
[illegible]	[illegible]	[illegible]	73051	BTS-470K	Yl.-Vi.-Yl. Expansion Bias Filter
[illegible]	[illegible]	[illegible]	73057	BTS-4.7 Meg.	Yl.-Vi.-Grn. 1st AF Grid
77	56KΩ	[illegible]	73060	BTS-56K	Grn.-Blue-Or. Voltage Divider Bias
78	100KΩ	[illegible]	73047	BTS-100K	Br.-Blk.-Yl. 1st AF Plate Decoupling
79	220KΩ	[illegible]	73049	BTS-220K	Red-Red-Yl. 1st AF Plate Load
80	1 Meg.	[illegible]	73053	BTS-1 Meg.	Br.-Blk.-Grn. 1st AF Screen Dropping
81	22KΩ	[illegible]	73041	BTS-22K	Red-Red-Or. Expansion Amplifier Bleeder
82	470KΩ	[illegible]	73051	BTS-470K	Yl.-Vi.-Yl. Expansion Amplifier Screen Dropping
83	220KΩ	[illegible]	73049	BTS-220K	Red-Red-Yl. Expansion Amplifier Plate Load
84	470KΩ	[illegible]	73051	BTS-470K	Yl.-Vi.-Yl. Expansion Diode
85	56KΩ	[illegible]	73060	BTS-56K	Grn.-Blue-Or. Delayed Audio AVC.
86	560Ω	[illegible]	73022	BTS-560	Grn.-Blue-Br. " " "
87	4.7 Meg.	[illegible]	73057	BTS-4.7 Meg.	Yl.-Vi.-Grn. Audio AVC Load
88	4.7 Meg.	[illegible]	73057	BTS-4.7 Meg.	Yl.-Vi.-Grn. Audio AVC Network
89	4.7 Meg.	[illegible]	73057	BTS-4.7 Meg.	Yl.-Vi.-Grn. Audio AVC Network
90	4.7 Meg.	[illegible]	73057	BTS-4.7 Meg.	Yl.-Vi.-Grn. Expansion Diode Load
91	390Ω	[illegible]	73020	BW-½-390	Or.-White-Br. Bias
92	270Ω	[illegible]	73018	BW-½-270	Red-Vi.-Br. Bias
[illegible]	[illegible]	[illegible]	73033	BTS-4700	Yl.-Vi.-Red Bias
[illegible]	[illegible]	1	73905	BW-1-1	Speaker Muting
[illegible]	[illegible]	[illegible]	73036	BTS-1200	Br.-Red-Red Bias
[illegible]	[illegible]	[illegible]	73061	BTS-470K	Yl.-Vi.-Yl. Output Grid
[illegible]	[illegible]	[illegible]	73049	BTS-220K	Red-Red-Yl. Output Grid
[illegible]	[illegible]	1	73061	BW-1-150	Br.-Grn.-Br. Bias
[illegible]	[illegible]	[illegible]	73039	BTS-15K	Br.-Grn.-Or. Tone Compensation
[illegible]	[illegible]	[illegible]	73060	BTS-56K	Grn.-Blue-Or. Tone Compensation
[illegible]	[illegible]	[illegible]	73049	BTS-220K	Red-Red-Yl. Compressor Diode Load
[illegible]	[illegible]	[illegible]	73051	BTS-470K	Yl.-Vi.-Yl. Compressor Voltage Divider
[illegible]	[illegible]	[illegible]	73053	BTS-1 Meg.	Br.-Blk.-Grn. Compressor Coupling
[illegible]	[illegible]	[illegible]	73902	AB-2000	Filter
[illegible]	[illegible]	1	73075	BTA-470	Yl.-Vi.-Br. Filter
[illegible]	[illegible]	1	73903	BW-1-15	Cutter Head Shunt

CHASSIS—BOTTOM VIEW



SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			[illegible] PART No.	JENSEN PART No.		
[illegible]	[illegible]	[illegible]				
	[illegible]	3.5Ω				
	CONE DIA.	VC DIA.				
	6"x9"	3/4"	NOT REA[illegible]			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	[illegible] PART No.	MEISSNER PART No.	
[illegible]	[illegible]	OΩ	.8Ω			
[illegible]	[illegible]	4Ω				
[illegible]	[illegible]	5Ω	4.5Ω		14-1040	
[illegible]	[illegible]	13.6Ω	1Ω	[illegible]	16-[illegible]	
[illegible]	[illegible]	14.5Ω		68-3002A	16-6670	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					PART No.		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]

MISCELLANEOUS

ITEM No.	PART NAME	RECORDIO PART No.	NOTES
81	PB Assby.		
82	Tuning Cap.		2 Gang Variable Cap.

MAINTENANCE

All adjustments for the recording mechanism were properly set by the manufacturer. In case some of the adjustments have been tampered with or damaged, the proper procedures for setting the adjustment correctly are given below.

DEPTH OF CUT

The hardness of the coating on recording discs varies with different manufacturers. This RECORDIO has been adjusted to cut RECORDIO DISCS properly. In case other discs are used, it might be necessary to readjust the depth of cut.

When the machine is cutting correctly, the groove width is slightly wider than the width of the "land" or uncut record material between grooves.

The ratio of groove to land widths should not be greater than 60% groove, 40% land, nor less than 50% groove, 50% land. The use of an ordinary reading glass will assist in making this adjustment.

1. In adjusting the groove width, it is well to make a trial cut of a dozen or more silent grooves [illegible]. Making such trial cuts into the record surface without modulation results in a straight groove of constant width, and also constant "land" width between grooves, whereas, modulation of the grooves causes them to assume a "wavy" shape, making it somewhat difficult to determine the correct groove width.
   A NEW RECORDIOPOINT CUTTING NEEDLE, OR ONE KNOWN TO BE IN PERFECT CONDITION, SHOULD BE USED IN MAKING DEPTH OF GROOVE ADJUSTMENTS, AS TURNING THE ADJUSTING SCREW WILL HAVE LITTLE OR NO EFFECT UPON THE GROOVE DEPTH, IF THE NEEDLE IS DULL.
2. Before making any change in the adjustment provided for regulating the depth of cut, the height of the recording arm off the turntable surface (arm lowered to recording position) should be observed. The distance between the lower edge of the nose of the arm and the turntable surface should be [illegible].

   REMOVE CUTTING NEEDLE BEFORE MAKING THIS MEASUREMENT.

   As the arm height has a definite bearing upon the uniformity of the groove cut into the record, this is very important, and the 5/16 inch measurement should be made with an accurately calibrated steel scale. Due to the possibility of the recording arm having been handled somewhat roughly in raising and lowering the arm, the arm height may be found to be incorrect, and an adjustment of the ARM HEIGHT ADJUSTMENT SCREW should be made so that the lower edge of the front end of the arm is EXACTLY 5/16 inch. To make this adjustment, raise the arm and loosen the lock nut which holds the adjusting screw in position. Turning the screw to the left raises the arm and to the right lowers the arm.
3. The depth of cut adjusting screw is located to the rear on the top of the recording arm. Turning the screw to the right (clockwise) increases the depth of cut, and turning the screw to the left (counter-clockwise) decreases the depth of cut. One turn of the adjusting screw makes a noticeable difference in the depth of the groove, therefore, the adjustments should be made in quarter or half turns, rather than in complete turns either way.

SHAVING COLLECTOR ADJUSTMENT

As the record is being made, a small shaving will be cut which is guided toward the center of the turntable by the rubber finger attached to the recording arm. The correct setting of this finger is such that the tip slightly touches the record surface. If re-adjustment is necessary, loosen retaining screw, re-set finger and tighten screw.

CUTTING HEAD LEADS

1. Observe that the leads connecting to the cutting head are properly placed within the arm so as not to interfere with the cutting head balance spring. Also, the wires should not be permitted to droop (arm horizontal) so that they will rub on the turntable.
2. The connecting wires from the cutting head should not be allowed to double up between the arm and arm platform, but should feed freely through the hole in the platform as the arm is lowered. Otherwise, the doubled up wires may prevent the arm from coming to rest on the head of the height adjustment screw.

PLAYBACK NEEDLE WEIGHT AND ADJUSTMENT

The weight of the playback needle on the record should be approximately 1.3 ounces. The screw located on the underside at the rear of the playback arm provides a means to regulate the needle weight. Turning this screw to the right decreases the weight and to the left increases the weight. A postal scale, hooked to the front edge of the playback arm can be used to check the needle weight. The arm should be raised just off the record surface when checking the needle weight. This adjustment has been made at the factory. Readjustment will be necessary only in case of damage.

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	PART No.	IRC PART No.	
32	22KΩ	½		BTS-22K	Red-Red-Or. Antenna Shunt
33	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Oscillator Grid
34	330Ω	½		BW-½-330	Or.-Or.-Br. " Cathode
35	22K	½		BTS-22K	Red-Red-Or. " Plate Dropping
36	68K	½	66-3500	BTS-68K	Blu.-Gray-Or. AF Cathode
37	39KΩ	1		BTS-39K	Or.-White-Or. " Screen Dropping
38	[illegible]	½		[illegible]	[illegible]
39	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
40	3900Ω	½		BTS-3900	Or.-White-Red 1st AF Cathode
41	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Level Indicator Diode Load Note 1.
42	47KΩ	½		BTS-47K	Yl.-Vi.-Yl. AF Coupling
43	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Voltage Dropping
44	220KΩ	½		BTS-220K	Red-Red-Yl. 1st AF Plate Load
45	68KΩ	½		BTS-68K	Blue-Gray-Or. AF Coupling
46	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Level Indicator Network Note 2.
47	3.3 Meg.	½		BTS-3.3 Meg.	Or.-Or.-Grn. AF Coupling
48	470KΩ	½		BTS-470K	" " " "
49	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. 2nd AF Grid
50	3300Ω	½		BTS-3300	Or.-Or.-Red " " Cathode
51	150KΩ	½		BTS-150K	Br.-Grn.-Yl. " " Plate Load
52	10KΩ	½		BTS-10K	[illegible]
53	470KΩ	½		BTS-470K	[illegible]
54	330Ω	½		BT-2-330	Or.-Or.-Br. " Cathode
55	3.3 Meg.	½		BTS-3.3 Meg.	Or.-Or.-Grn. Phono Shunt
56	3.3 Meg.	½		BTS-3.3 Meg.	Or.-Or.-Grn. Series Phono
57	[illegible]	½		[illegible]	[illegible]
58	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. " Load
59	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue Mike Amplifier Grid
60	[illegible]	½		[illegible]	[illegible]
61	1 Meg.	½		BTS-1 Meg.	[illegible]
62	[illegible]	½		[illegible]	[illegible]
63	[illegible]	½		[illegible]	[illegible]
64	[illegible]	½		[illegible]	[illegible]
65	[illegible]	½		[illegible]	[illegible]
66	[illegible]	½		[illegible]	[illegible]

Note 1: [illegible] used in all receivers.
Note 2: Some models use a 3.3 Meg. resistor in this application. Replacement same as item 47.

FILTER CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA			INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D C RESISTANCE	INDUCTANCE @ CURRENT 1000~)	PART NO.	STANCOR PART NO	THORDARSON PART NO.	
[illegible]	[illegible]	40Ω	[illegible]	[illegible]	[illegible]	[illegible]	Drill one new mounting hole.

Filter Choke is not used in models with dynamic speakers.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	PART No.	STANCOR PART No.	THORDASON PART No.	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

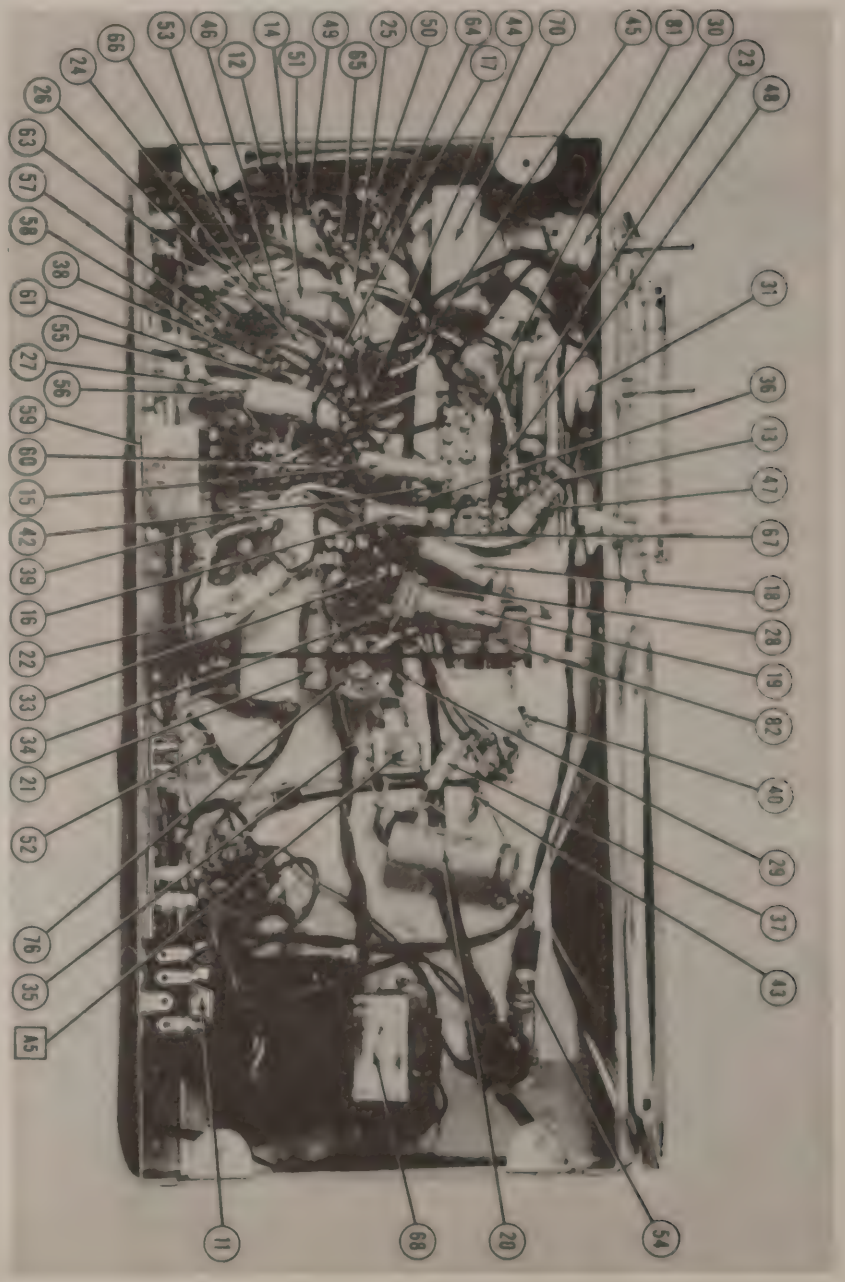
TRANSFORMER (CUTTER)

ITEM No	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES		PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TRANSFORMER (OUTPUT)

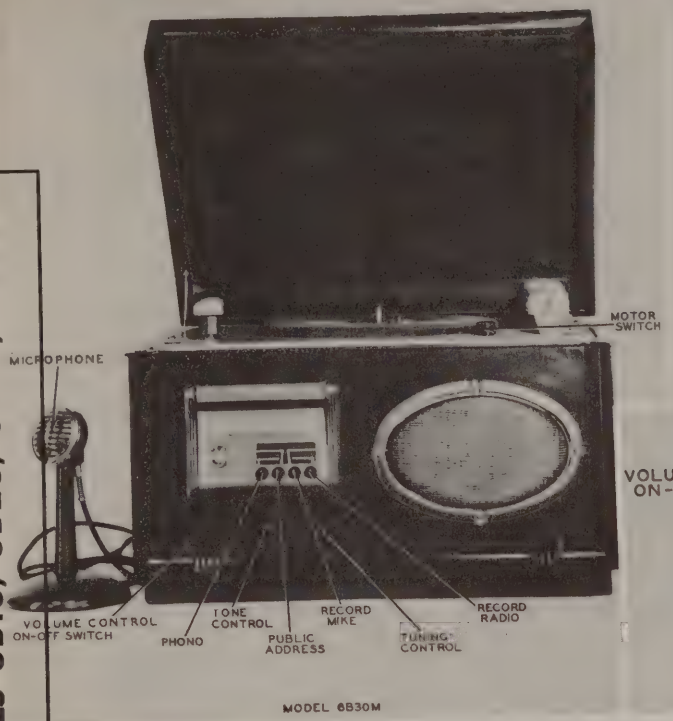
ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES		PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CHASSIS—BOTTOM VIEW

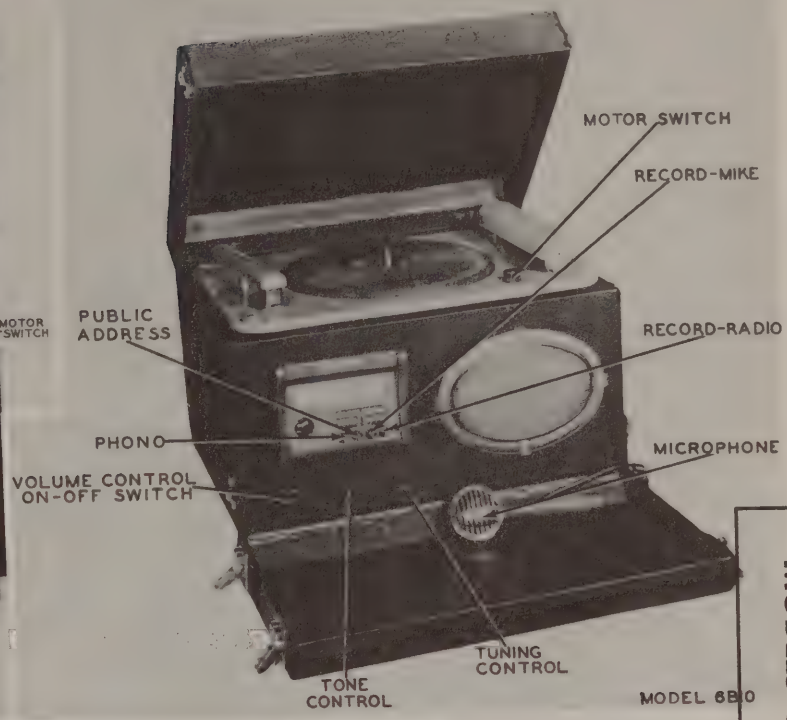


RECORDIO
MODELS 6B10, 6B20, 6B30, 6B32

RECORDIO
MODELS 6B10, 6B20, 6B30, 6B32



MODEL 6B30M



MODEL 6B10

TRADE NAME	Recordio Model 6B10, 6B20, 6B30, 6B32
MANUFACTURER	Wilcox-Gay Corp., 604 Seminary St., Charlotte, Michigan
TYPE SET	AC Operated Phono.-Recorder-PA System - Superheterodyne Receiver, Self-Contained Loop Antenna.
TUBES (EIGHT)	Types, 6A8GT Converter, 6SK7GT IF Amp., 6SQ7GT Det.-AVC-AF, 6SJ7GT Mic. Amp., 6E5 Tuning Eye, 6SN7GT 2nd AF Cutter Amp., 6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	105-125 Volts AC
TUNING RANGE—BROADCAST	540-1620KC RATING .510 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

To set pointer turn variable fully closed and set pointer at last reference mark at left end of dial. Set volume control at maximum and keep output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to grid of 6A8. Low side to chassis.	456KC	1500KC	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
200 MMF.	High side to ext. ant. lead. Low side to chassis.	600KC	600KC	"	A5	" " " "
200 MMF.	"	1400KC	1400KC	"	A6	" " " "
200 MMF.	"	"	"	"	A7	" " " "
Repeat last three steps for greater accuracy.						

DISASSEMBLY INSTRUCTIONS

1. Remove three push-on type control knobs and felt washers from front panel board.
2. Disconnect the phono-motor plug from chassis.
3. Disconnect the phono-pickup plug from chassis.
4. Disconnect the phono-cutter plug from chassis.
5. Disconnect the speaker plug from chassis.
6. Disconnect microphone plug from chassis.
7. Disconnect the loop antenna plug from top of chassis.
8. Remove two Phillips head screws holding loop antenna to cabinet. Remove loop antenna.
9. Remove four Phillips head machine screws and washers holding chassis to cabinet.
10. Remove four Phillips head machine screws holding record changer to cabinet. Remove changer.
11. Remove chassis.
12. Remove four screws holding speaker to cabinet. Remove speaker.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: RECORDIO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	6A8GT	6A8GT	8A	
2	IF Amp.	6SK7GT	6SK7GT	8N	
3	Det.-AVC-AF	6SQ7GT	6SQ7GT	8Q	
4	MIC Amp.	6SJ7GT	6SJ7GT	8N	
5	Tuning Eye	6E5	6E5	6R	
6	2nd AF-Cutter Amp.	6SN7GT	6SN7GT	8BD	
7	Power Output	6V6GT	6V6GT	7AC	
8	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

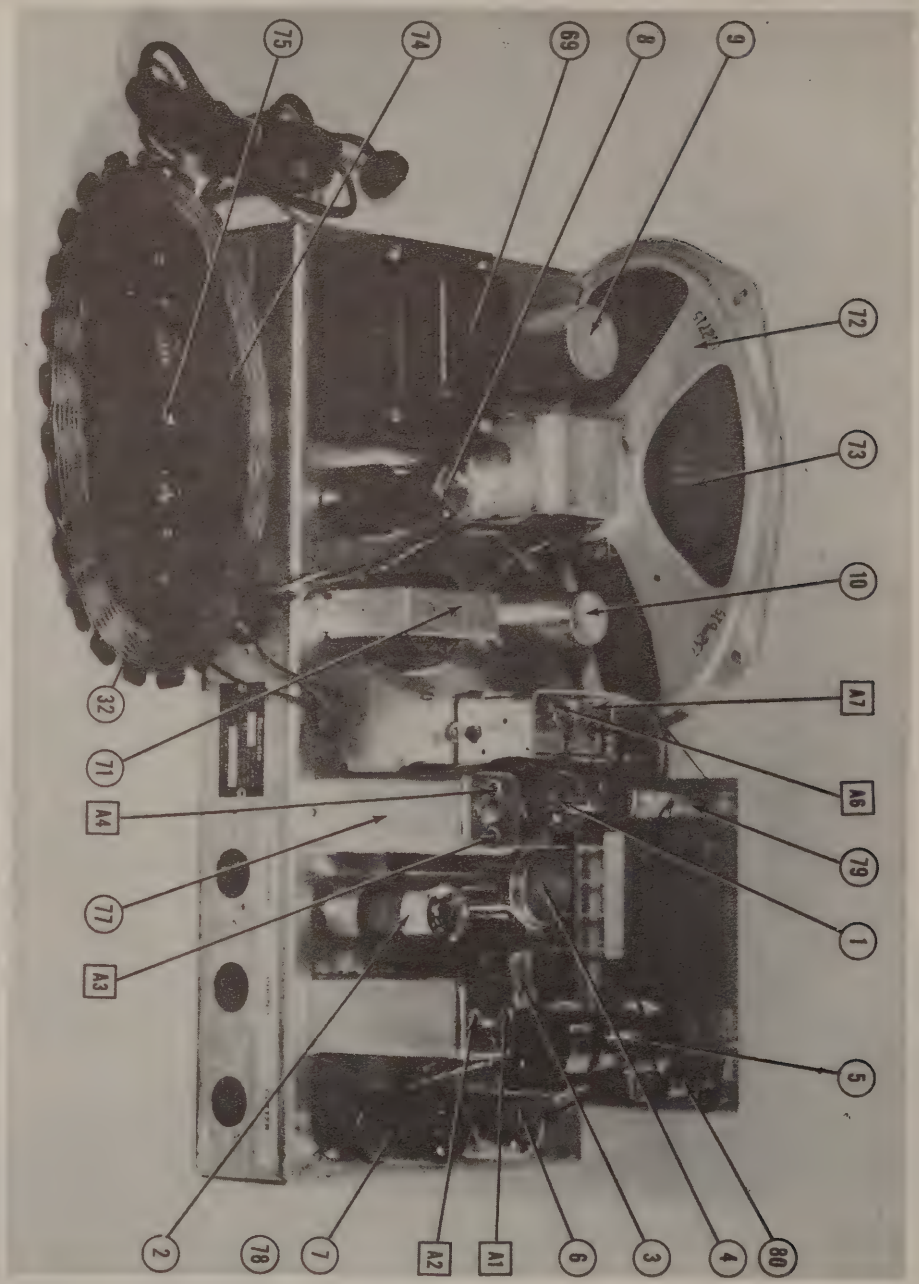
ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RECORDIO PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
9A	15	450	18-2039	FP426	DY-4x10-450†	EL-423†	AF44J4A	UP7DJ52	Filter
B	15	450							■ "
C	40	25			M-2x40-150	TA-50	PRS25-25		▲ Cath. Bypass
D	40	25					PRS25-25		" "
10A	20	25	18-2040	FP332	DY-312	EL-202	AF22J4A	UP6CJ12	" "
B	10	400							■ Filter
C	10	400							▲ "
11	.01	110		TP410	S-6-01	TC-11	684-01	DT6S1	Line Bypass
12	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	Audio Coupling
13	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	Tone Compensation
14A	.1	200		TP428	S-4-1	TC-1	484-.1	DT4P1	Level Indicat. Filt.
B	.03	400		TP424	S-6-03	TC-13	484-03	DT4S3	" " " *
15	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	Audio Coupling
16	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	" "
17	.1	400		TP428	S-4-1	TC-1	484-.1	DT4P1	IF Cath. Bypass
18	.1	400		TP428	S-4-1	TC-1	484-.1	DT4P1	Screen Bypass
19	.1	200		TP428	S-4-1	TC-1	484-.1	DT4P1	Conv. Cath. Bypass
20	.5	400		TP431	S-4-5	TC-5	484-.5	DT4P5	RF Bypass Pwr. Supp.
21	.1	400		TP428	S-4-1	TC-1	484-.1	DT4P1	Osc. Anode Decoupling
22	.1	200		TP428	S-4-1	TC-1	484-.1	DT4P1	AVC Filter
23	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	Audio Coupling
24	50	500		MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	Level Indicator Coup.
25	100	500		MC235	MO.5-31	1FM-31	1468-0001	5W5T1	Audio Plate Bypass
26	50	500		MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	IF Filter
27	150	500		MC236	MO.5-315	1FM-315	1468-00015	5W5T15	Phono Coupling
28	50	500		MC225	MO.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor
29	20	500			MO.5-42	MS-42		5W5Q2	Fixed Trimmer

* Used in later models
† Parallel two 20 mfd. sections to obtain 40 mfd.
‡ Parallel sections to obtain 20 mfd.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RECORDIO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
30A	500KΩ	1		MR48	D13-133	M-60-Z	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 30A per instructions
C	Switch			M26	41	SW-A	" " " " "
31A	250KΩ	1		MR45			Tone Control
B	Shaft			Not Req.			Attach to 31A per instructions

CHASSIS—TOP VIEW



NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN RADIO POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	6ABGT	0V	*	240V.DC	87 V.DC	1.55V.DC	170V.DC	*	2.9V.DC	.1V.DC
2	6SK7GT	0V	*	4.3V.DC	.1V.DC	4.3V.DC	87 V.DC	*	240V.DC	
3	6SQ7GT	0V.	0V.	1.45V.DC	.4V.DC	0V.	128V.DC	*	*	
4	6SJ7GT	0V	*	0V.	-.35V.DC	0V.	4.4V.DC	*	205V.DC	
6	6SN7GT	0V.	235V.DC	8.3V.DC	0V.	70V.DC	3V.DC	*	*	
7	6V6GT	0V.	*	227V.DC	240V.DC	0V.	240V.DC	*	13.5V.DC	
8	5Y3GT	0V.	280V.DC	0V.	275V.AC	0V.	275V.AC	0V	280V.DC	

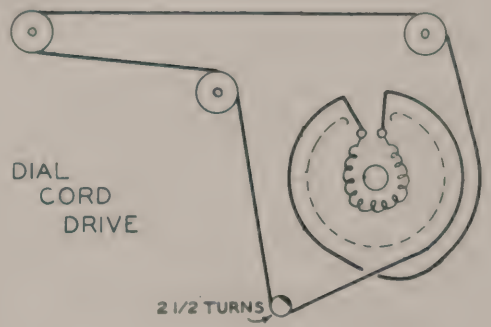
* (1) VOLTAGE ACROSS FILAMENTS 6.3VAC EXCEPT 6SJ7 WHICH IS 4.2V.AC.
(2) VOLTAGE ACROSS ENTIRE FILAMENT STRING MEASURE FROM CHASSIS IS 13.5V.DC.

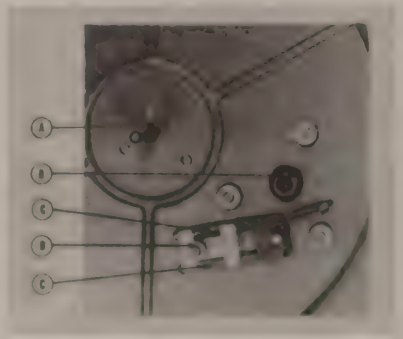
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	6ABGT	0Ω	315Ω	110KΩ	100KΩ	40KΩ	132KΩ	315Ω	285Ω	1.4MEG.
2	6SK7GT	0Ω	315Ω	480Ω	1.4MEG.	480Ω	100KΩ	315Ω	110KΩ	
3	6SQ7GT	0Ω	500KΩ	3.7KΩ	500KΩ	6.5MEG.	390KΩ	315Ω	315Ω	
4	6SJ7GT	0Ω	310Ω	0Ω	10MEG.	0Ω	1.1MEG.	315Ω	330Ω	
6	6SN7GT	440KΩ	110KΩ	1000Ω	430KΩ	280KΩ	2.3KΩ	315Ω	315Ω	
7	6V6GT	0Ω	315Ω	110KΩ	110KΩ	430KΩ	110KΩ	315Ω	315Ω	
8	5Y3GT	0Ω	110KΩ	INF.	170Ω	INF.	180Ω	INF.	110KΩ	

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.





OILING

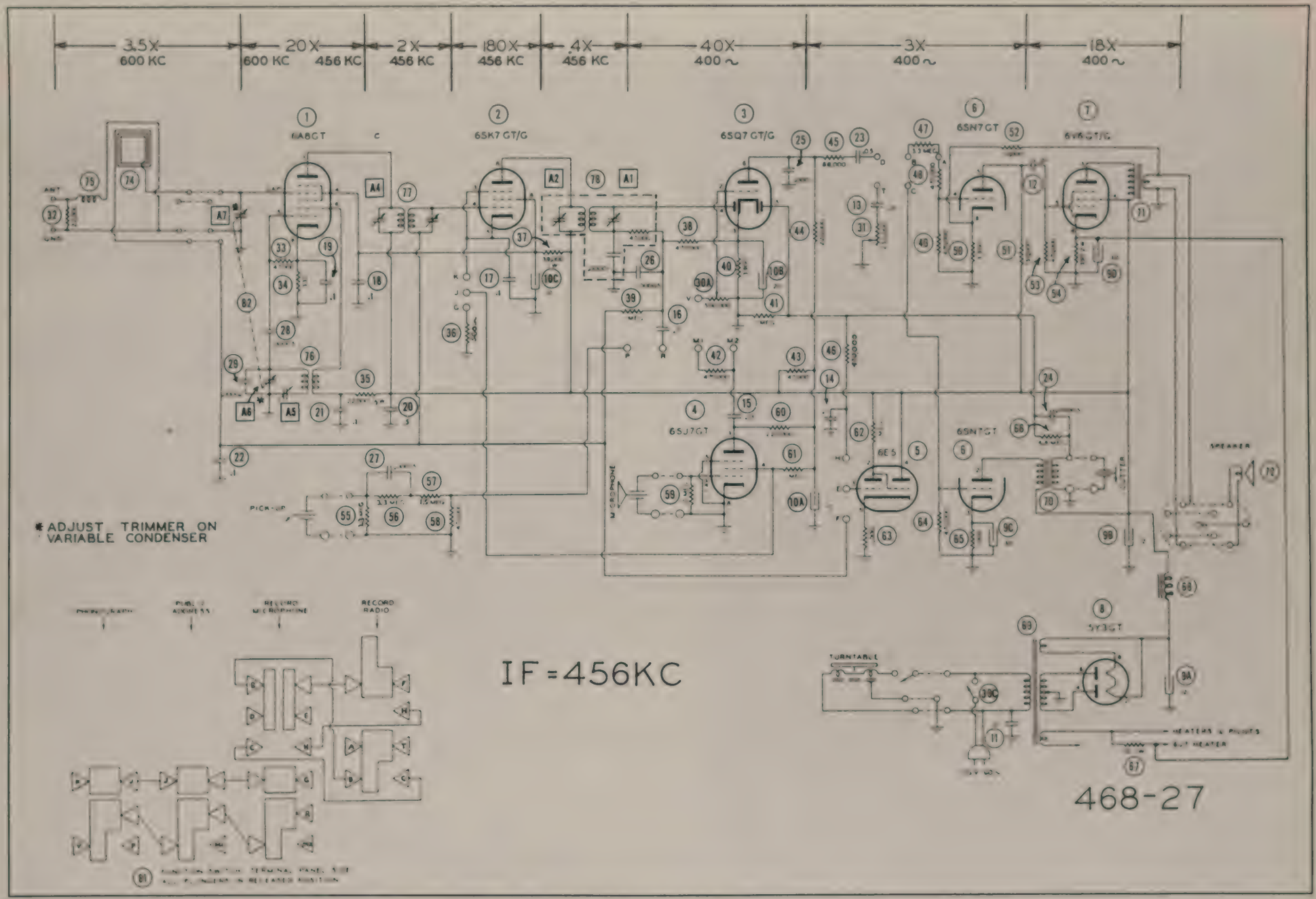
When the RECORDIO leaves the factory, the equipment is properly lubricated and requires no immediate attention. Frequent oiling of the mechanism is not required, although the use of a small amount of oil judiciously applied about once a year, in accord with the following directions, will suffice to maintain the equipment in good order.

1. Remove turntable retaining clip.
2. Remove the turntable by applying upward pressure to the rim of the table, at the same time lightly tapping the turntable center post with a small tool.
3. Remove idler wheel retaining clip and washer and remove idler wheel.
4. Remove all record shavings that may have accumulated under the turntable, also making sure that the drive wheel assembly is free from shavings or other particles likely to impede its smooth operation.
5. Lubricate the oiling positions as indicated in above illustration as follows.

NOTE: Use only two or three drops of electric motor oil at each position.

(a) Turntable shaft bearing.
(b) Upper motor bearing.
(c) Drive wheel arm slide.
(d) Drive wheel arm pivot.

6. Carefully apply one or two drops of oil to the drive wheel bearing, so that the oil will not run out onto the rubber rims of the wheels.
7. Replace idler wheel assembly.
8. Replace turntable on the center post. Lower the turntable carefully, without tapping, and rotate the table by hand so that the rubber rim of the drive wheel seats properly against the inside surface of the turntable rim.
9. The lower motor bearing (not illustrated) may be lubricated by saturating the felt wick which surrounds the lower end of the motor shaft.



The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 1 volt battery bias substituted for measurement.

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	PART No.	IRC PART No.	
37	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
38	47K	½		BW-½-47	Yl.-Vi.-Br. 1st IF Cathode
39	68K	½		BTS-68K	Blue-Gray-Or. 1st IF Screen Dropping
40	47K	½		BW-½-47K	Yl.-Vi.-Or. IF Filter
41	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vi.-Grn. 1st AF Grid
42	220K	½		BTS-220K	Red-Red-Red 1st AF Cathode
43	220K	½		BTS-220K	Red-Red-Yl. 1st AF Plate Load
44	100K	½		BTS-100K	Br.-Blk.-Yl. 1st AF Plate Filter
45	2.2 Meg.	1		BTS-2.2 Meg.	Red-Red-Grn. 1st AF Screen Dropping
46	470K	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
47	470K	½		BTS-470K	Yl.-Vi.-Red Tone Compensation
48	10K	½		BW-½-10K	Brn.-Blue-Or. Tone Compensation
49	10K	2		BW-2-10K	Br.-Gr.-Or. Output Load

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			INSTALLATION NOTES
	PRI.	SEC. 1	SEC. 2	SEC. 3	PART No.	STANCOR PART No.	THORDASON PART No.	
50	105-125 V. 60 cy.	2.5 V. @ 2.0 A.	5.0 V. @ 3.0 A.	6.3 V. @ 2.0 A.	504176	P-6134*	T-13B20*	*Drill new mounting holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
51A	10000	2.5	0.5K	.05Ω	504122	A-3047	T-20S71		†Solder to bracket same as the original.
B					504061				Used with speaker M-502168
C					502170				" " " R-502168

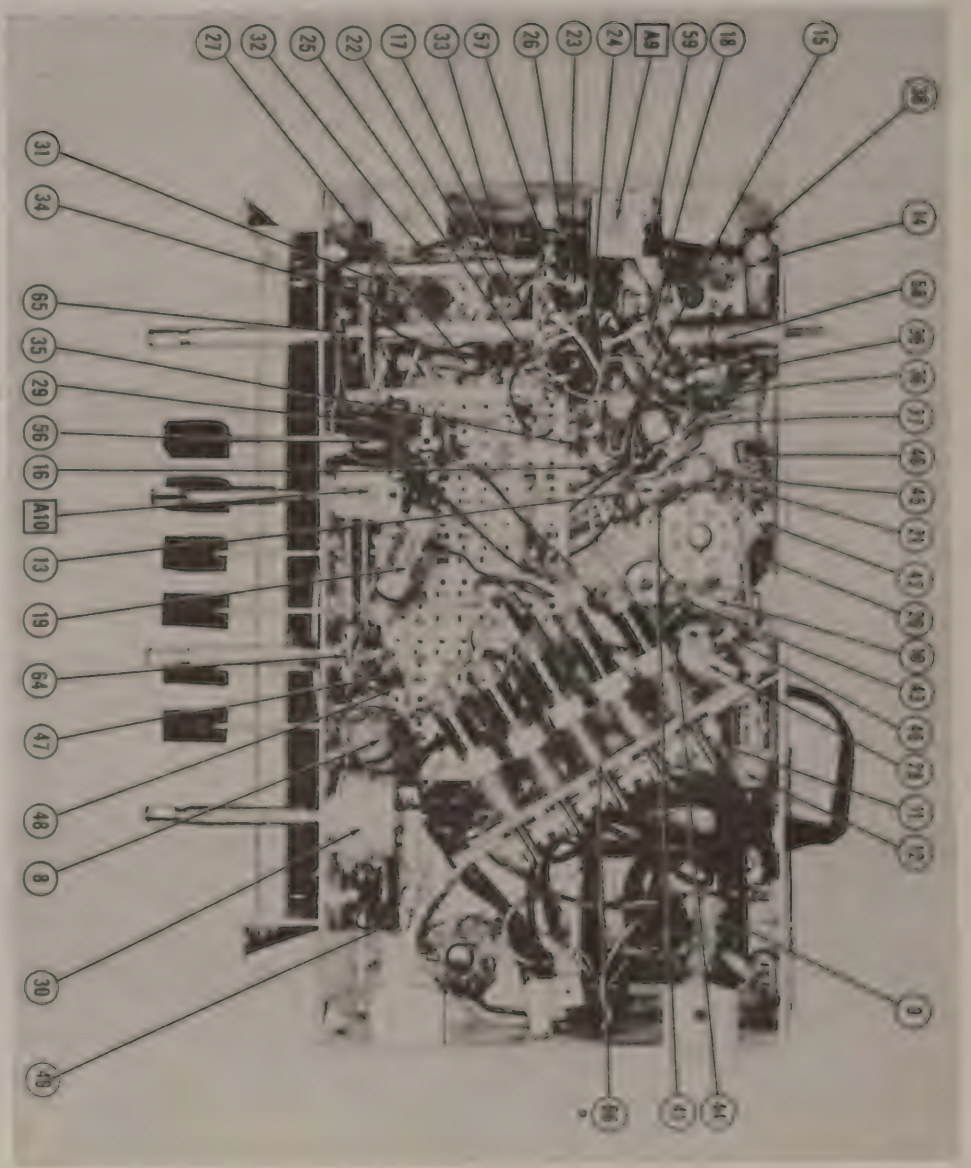
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			PART No.	JENSEN PART No.		
52A	10002 Speaker	3.2Ω	D-502168	Mod. H-6S		Used with Output Transformer 504122
B			M-502168			" " " " 504061
C			R-502168			" " " " 502170
53A	CONE DIA. 6-3/8"	VC DIA. 1/2"	504152			
B			504062			Used with Speaker M-502168
C			502168			" " " R-502168

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	PART No.	MEISSNER PART No.	
54A	Loop Ant.	.7Ω	.6Ω	502430		Used in Speaker Unit A, B, C.
B	" "	.5Ω	.2Ω	502347		" " Model 502L2
55	R. Ant. Coil	.5Ω	.2Ω	502112		
56	Ant. Coil	.8Ω	.2Ω	502110		
57	R. RF Coil	1.1Ω	.2Ω	502111		
58	R. Osc. Coil		.2Ω	502116		
59	Osc. Coil		.2Ω	502111		
60	Input IF	2.2Ω	2.2Ω	502105	16-4868	
61	Output IF	1.8Ω	1.8Ω	502135	16-4869	

CHASSIS—BOTTOM VIEW



DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA STEWART-WAR. PART No.		INSTALLATION NOTES
62	Bayonet	6-8	0.25	Blue	110629		Type 44
63	Bayonet	6-8	0.25	Blue	110629		Type 44

MISCELLANEOUS

ITEM No.	PART NAME	STEWART-WARNER PART No.	NOTES
64	Tone Switch	502146	
65	Band Switch	502147	
66	PB Assembly	502025	Complete Coil & Trimmer Assby. For Automatic Tuning.
67	Tuning Cap.	503122	3 Gang Variable Cap.
	PB Switch	502177	
A9	Trimmer Cap.	502171	SW Osc. Adj. 5-35 MMFD.
A10	" "	502172	SW Ant. Adj. 25-100 MMFD.
	Coil	502907	PB Tuning (540-1000KC)
	"	502906	" " (650-1300KC)
	"	502908	" " (975-1600KC)
	Dial Scale	502219	Glass
	Knob	501449	Volume or Tuning (9001C)
	"	501458	Tone or Band Sw. (9001C)
	"	501498	Volume or Tuning (9001D, E, F)
	"	501499	Tone or Band Sw. " " "
	Push Button	501497	(Model 9001C)
	"	501651	(Model 9001D, E, F)
	Pointer	502601	

PUSH BUTTON ADJUSTMENTS

The five push buttons from left to right (facing front of receiver) cover the following frequencies in order:

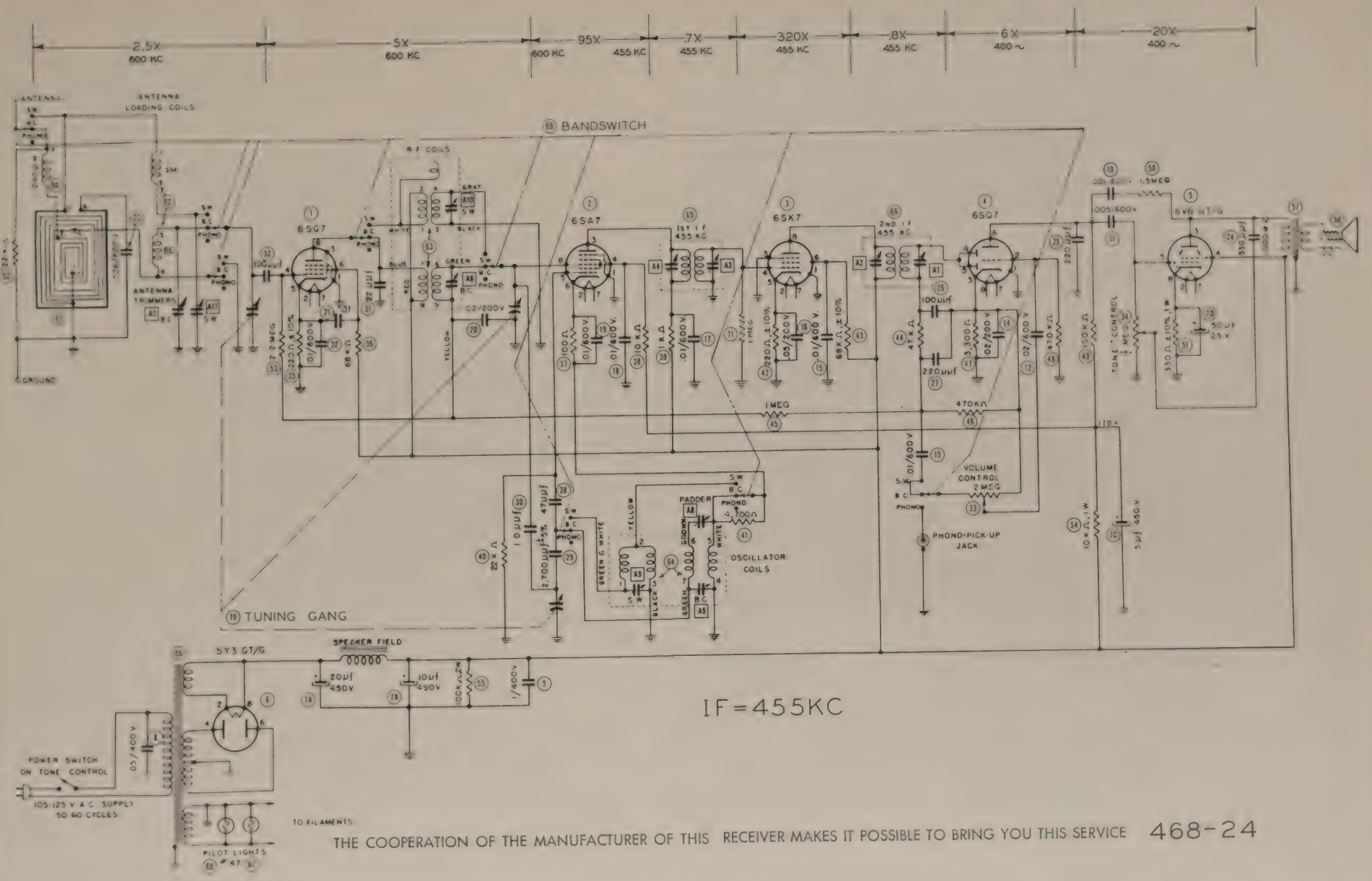
540 to 1000KC, 650 to 1300KC, 650 to 1300KC, 975 to 1600KC, 975 to 1600KC.

To set the individual push buttons on the desired stations proceed as follows:

1. Select a station within the frequency range of B1 and B2 (540 to 1000KC) and tune in the station using manual tuning.
2. Press in push button corresponding to B1 and B2 which is the one on the left (facing front of receiver).
3. Adjust B1 to tune in the desired station, Turning the adjustment counter-clockwise increases the frequency.
4. Adjust B2 for maximum volume of the selected station.
5. Proceed in the same order in setting the remaining push buttons. Always select a station within the frequency range of the corresponding push button adjustments. B3, B5, B7 and B9 are adjusted to tune in station. B4, B6, B8 and B10 are adjusted for maximum volume of selected station.

DISASSEMBLY INSTRUCTIONS

1. Remove the four push-on type control knobs and felt washers.
2. Remove five Phillips head screws from cabinet back cover. Remove cover.
3. Disconnect blue and green leads from loop antenna.
4. Remove Phillips head screw holding brown antenna lead to loop antenna. Remove lead.
5. Remove push-on type black lead clip from loop antenna.
6. Remove three Phillips head wood screws holding loop antenna to cabinet. Remove loop ant.
7. Remove four hex nuts and washers holding speaker to cabinet.
8. Disconnect speaker plug from chassis by removing set screw.
9. Remove speaker from cabinet.
10. Remove four hex head machine screws and washers holding chassis to cabinet. Remove chassis.



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE 468-24

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NOTE VOLTAGE & RESISTANCE READINGS TAKEN IN STANDARD BROADCAST POSITION

VOLTAGE READINGS

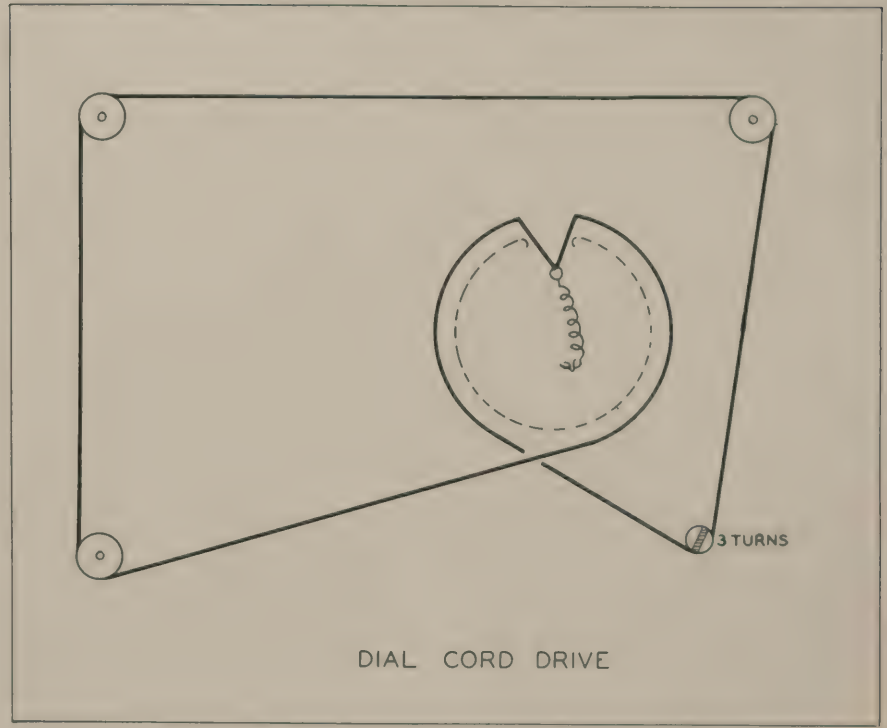
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SG7	0V.	0V	2.1VDC	0V.	2.1VDC	120VDC	6.3VAC	300VDC
2	6SA7	0V	0V	300VDC	110VDC	0V	1.2VDC	6.3VAC	1V DC
3	6SK7	0V	0V	0V	0V	2.4VDC	105V DC	6.3VAC	300VDC
4	6SQ7GT	0V	0V	1.5VDC	4VDC	4V DC	155VDC	6.3VAC	0V
5	6V6GT	0V	0V	295VDC	300VDC	0V.	220VDC	6.3VAC	15.5VDC
6	5Y3GT	0V	340VDC	0 V	325VAC	117VAC	325VAC	0V	340VDC

RESISTANCE READINGS

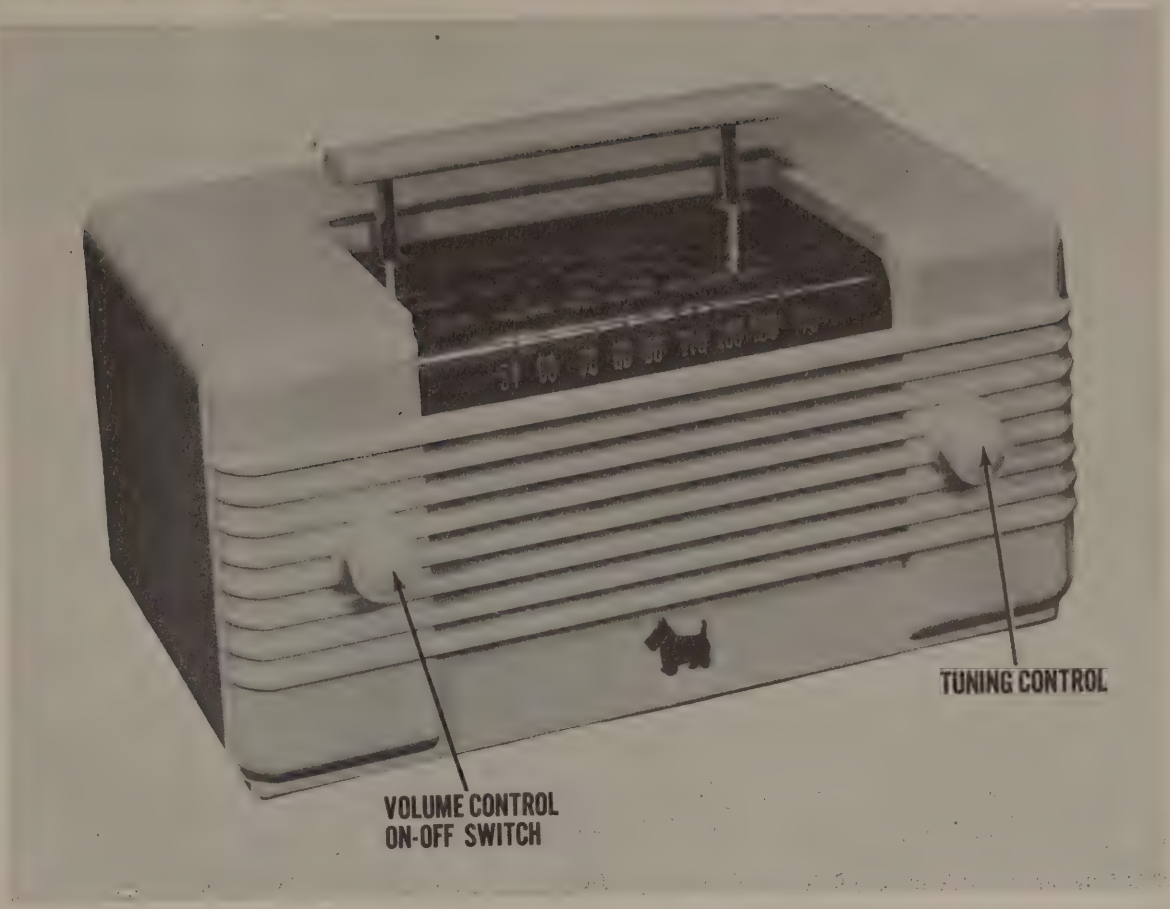
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SG7	0Ω	0Ω	190Ω	3.3MEG	190Ω	150KΩ	2Ω	80KΩ
2	6SA7	0Ω	0Ω	81KΩ	90KΩ	20.5KΩ	82Ω	.2Ω	1.3MEG
3	6SK7	0Ω	0Ω	0Ω	10.5Ω	190Ω	150KΩ	2Ω	80KΩ
4	6SQ7GT	0Ω	420KΩ	3400Ω	480KΩ	480KΩ	230KΩ	2Ω	0Ω
5	6V6GT	0Ω	0Ω	80KΩ	80KΩ	480KΩ	1.3MEG	.2Ω	300Ω
6	5Y3GT	INF	80KΩ	INF	90Ω	INF	85Ω	INF	80KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



DIAL CORD DRIVE



REMLER MODEL MP5-5-3

TRADE NAME	Remler Model MP5-5-3 "Scottie"
MANUFACTURER	Remler Co., Ltd., 2101 Bryand St., San Francisco, Calif.
TYPE SET	AC Operated Superheterodyne - Self Contained Loop Antenna
TUBES (FIVE)	Types, 6SA7 Converter, 6SK7 IF Amp., 6SQ7 Det.-AVC-AF, 6V6GT Power Output, 6X5GT Rectifier.
POWER SUPPLY	110 - 120 Volts AC
TUNING RANGE—BROADCAST	540-1730 KC RATING .390 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

Volume control at maximum volume and output from signal generator no higher than necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin #8 (grid) of 6SA7. Low side to chassis.	450KC	High freq. end. (Variable fully open)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
200 MMF.	High side to ant. terminal. Low side to chassis.	1730KC	"	"	A5	" " " "
200 MMF.	"	1400KC	Tune for maximum output.	"	A6	Adjust for maximum output. This adjustment may not be found on some models.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: REMLER PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	6SA7	6SA7	8R	
2	IF Amp.	6SK7	6SK7	8N	
3	Det.-AVC-AF	6SQ7	6SQ7	8Q	
4	Power Output	6K6GT	6K6GT	7S	
5	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: REMLER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6	16	450		ST597	M-16-450	UT-16	PRS450-16	BR1645	Filter
6A	8	450		2S567	DHS-2x8-450	TU-88	PRSB450-8-8	EZ588	" ‡
B	8	450							"
7	4	450		TC70	M-4-450	UT-4	PRS450-4	BR445	"
8	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	6V6 Plate Bypass
9	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	Audio Coupling
10	.001	600		TP404	S-6-001	TC-21	684-001	DT6D1	Audio Plate Bypass
11	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	Audio Coupling
12	.01	600		TP410	S-6-01	TC-11	684-01	DT6S1	" "
13	.05	600		TP415	S-6-05	TC-15	684-05	DT6S5	Screen Bypass
14	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
15	70	500		MC230	MO.5-45	MS-47	1469-00007	5W5Q7	Diode Coupling
16	500	500		MC245	MO.5-35	1FM-35	1468-0005	5W5T5	IF Bypass Diode
17	70	500		MC230	MO.5-45	MS-47	1469-00007	5W5Q7	Osc. Grid Capacitor

‡Used in some models only

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: REMLER PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
18A	1 Meg.	1	L-20305	MR53	D13-137	M-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 18A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

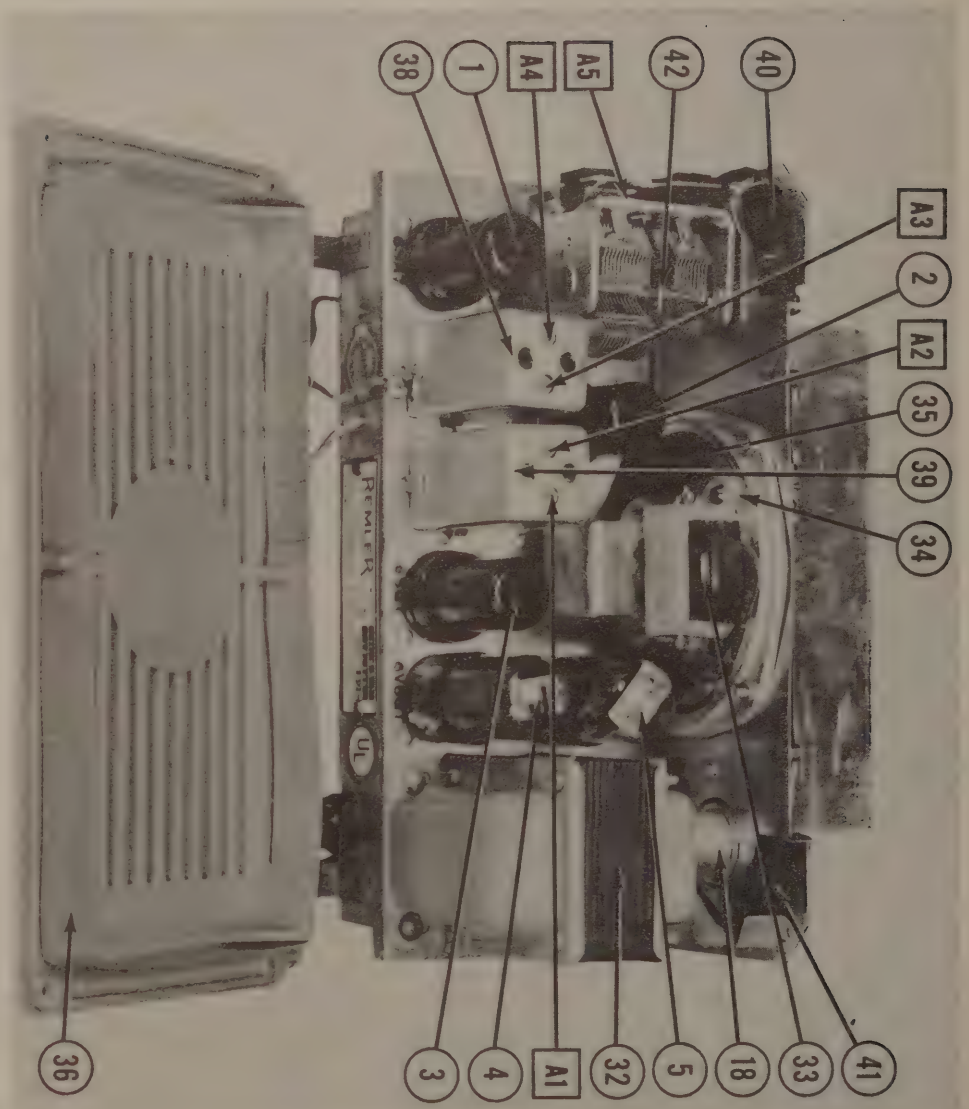
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: REMLER PART No.	IRC PART No.	IDENTIFICATION CODES
19	22KΩ	¼		BTS-22K	Red-Red-Or. Oscillator Grid
20	10KΩ	2		BT-2-10K	Br.-Blk.-Or. Screen Dropping
21	400Ω	½		BW-½-390	Yl.-Blk.-Br. IF Cathode
22	1 Meg.	¼		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
23	250KΩ	¼		BTS-220K	Red-Grn.-Yl. Diode Load
24	250KΩ	¼		BTS-220K	Red-Grn.-Yl. 1st AF Plate Load
25	10 Meg.	¼		BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
26	3.3 Meg.	¼		BTS-3.3 Meg	Or.-Or.-Grn. AVC Diode Load
27	1 Meg.	¼		BTS-1 Meg.	Br.-Blk.-Grn. Output Grid
28	330Ω	1		BTA-330	Or.-Or.-Br. Voltage Divider Bias
29	22Ω	½		BW-½-22	Red-Red-Blk. Voltage Divider Bias
30	1500Ω	5		AB-1500	Voltage Divider Bias
31	3300Ω	2		BT-2-3300	Or.-Or.-Red Filter

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: REMLER PART No.	STANCOR PART No.	THORDARSON PART No.	INSTALLATION NOTES
32	117VAC @ .390A	620VCT @ .044A	6.1VAC @ 2.3A		CS-5720	P-6119*	T-22R01	*Mount upright with universal mounting brackets.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA REMLER PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
33	6800Ω	3.5Ω	500Ω	.25Ω	CS-0438	A-3878	T-22547		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA REMLER PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-106		
34	PM	3.5Ω		Mod. P5-X		
	CONE DIA.	VC DIA.				
35	4½"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA REMLER PART No.	MEISSNER PART No.	INSTALLATION NOTES
36	Loop Ant.	0Ω	1.7Ω	W72285		
37	Osc. Coil	.7Ω	4.5Ω	L30230	14-1040	
38	Input IF	14.5Ω	11Ω	L30232	16-6658	
39	Output IF	12.5Ω	14.5Ω	L30233	16-6660	

DIAL LIGHT

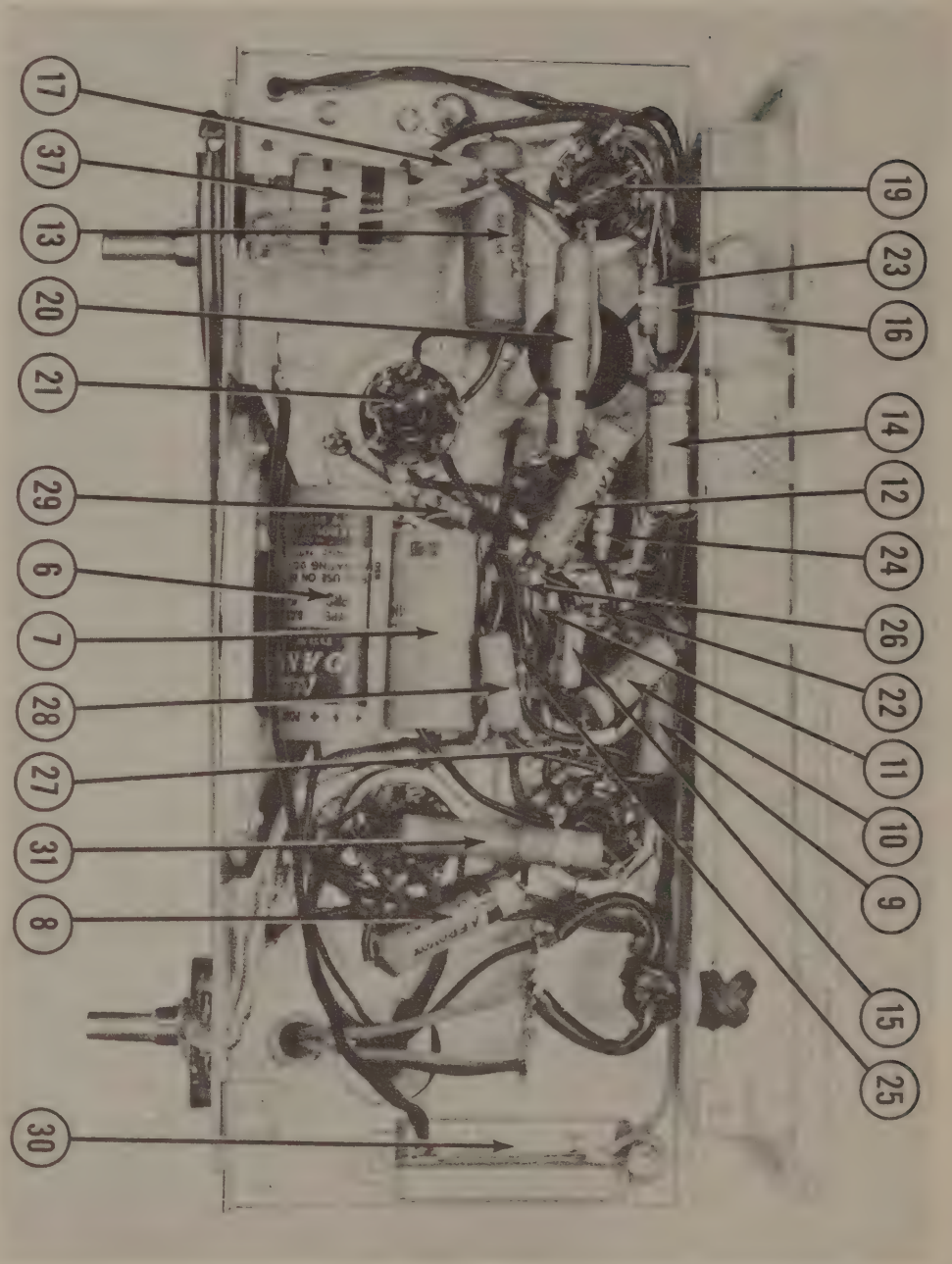
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA REMLER PART No.		INSTALLATION NOTES
40	Bayonet	6-8	0.25	Blue			Type 44
41	"	6-8	0.25	"			" "

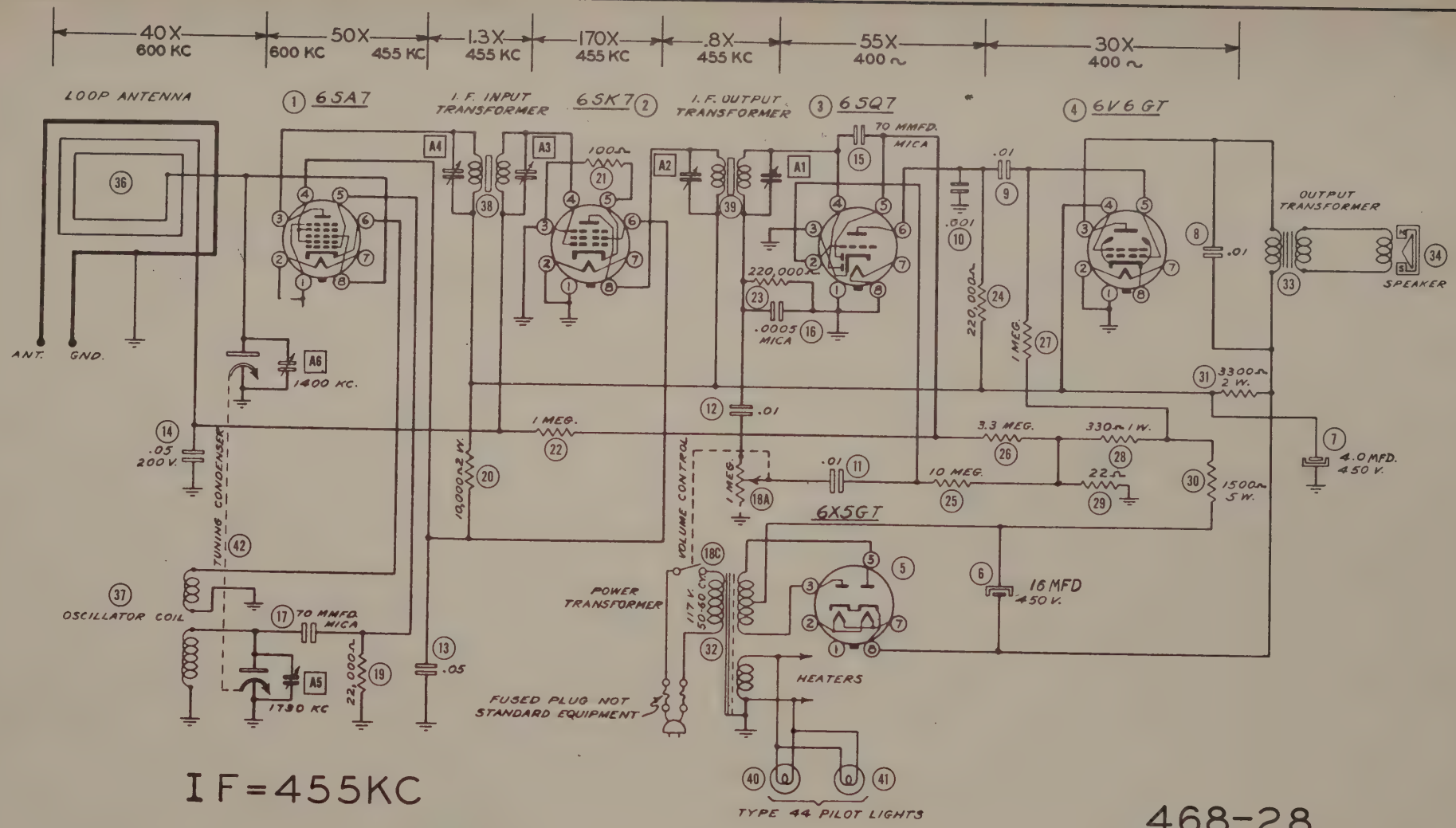
MISCELLANEOUS

ITEM No.	PART NAME	REMLER PART No.	NOTES
42	Tuning Cap.	L-10119	2 Gang Variable Cap.

DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW





IF=455KC

468-28

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SA7	0V.	0V.	112V.DC	105V.DC	-5.6V.DC	0V.	6V.AC	-1V.DC
2	6SK7	0V.	0V.	0V.	-1V.DC	3.6V.DC	105V.DC	6V.AC	212V.DC
3	6SQ7	0V.	-25V.DC	0V.	-25V.DC	-2V.DC	115V.DC	6V.AC	0V.
4	6V6GT	0V.	0V.	270V.DC	212V.DC	-12V.DC	-16V.DC	6V.AC	0V.
5	6X5GT	285V.DC	0V.	310V.AC	0V.	310V.AC	0V.	6V.AC	285V.DC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

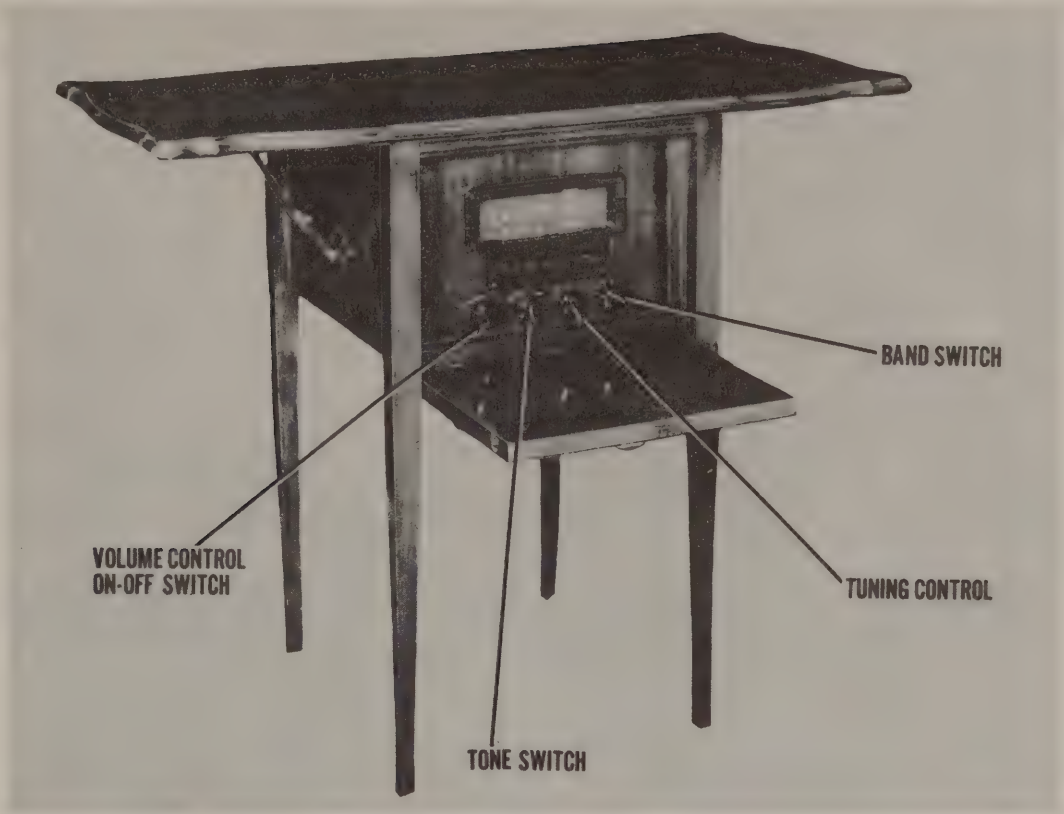
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SA7	0Ω	0Ω	120KΩ	130KΩ	24.5KΩ	.5Ω	.2Ω	3.7MEG.
2	6SK7	0Ω	0Ω	0Ω	3.7MEG.	405Ω	130KΩ	.2Ω	120KΩ
3	6SQ7	0Ω	10MEG.	0Ω	2.9MEG.	255KΩ	340KΩ	.2Ω	0Ω
4	6V6GT	0Ω	0Ω	120KΩ	124KΩ	875KΩ	320Ω	.2Ω	0Ω
5	6X5GT	120KΩ	0Ω	1800Ω	INF.	1800Ω	INF.	.2Ω	120KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

STEWART-WARNER
MODELS 9001-C, D, E, F



STEWART-WARNER MODELS 9001-E

TRADE NAME	Stewart-Warner Models 9001-C, D, E, F.
MANUFACTURER	Stewart-Warner Corp., 1826 Diversey Pkway., Chicago, Ill.
TYPE SET	AC Operated 2 Band Superheterodyne Receiver - Self Contained Loop Antenna
TUBES (SIX)	Types, 6SK7 RF Amp., 6SA7 1st Det.-Osc., 6SF7 IF-2nd Det.-AVC, 6SK7 1st AF, 6K6GT Power Output, 5Y3GT Rectifier
POWER SUPPLY	117 Volts AC — **RATING** .485 Amps. @ 117V AC
TUNING RANGE—BROADCAST	540-1780KC — **SHORT WAVE** 8.9 - 12.8MC

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer at the last reference mark at the left end of the dial. To insure proper tracking keep receiver and loop in the same relative position as they are when mounted in cabinet. Set volume control at maximum volume and keep output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to stator of rear section of variable. Low side to chassis.	455KC	BC (Clockwise)	Any point of non-interfering signal.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output
500 MMF.	Ext. Ant. Clip on loop.	1500KC	"	1500KC	"	A5	" " " "
500 MMF.	"	"	"	Tune for maximum output.	"	A6	" " " "
500 MMF.	"	"	"	"	"	A7	" " " "
500 MMF.	"	600KC	"	"	"	A8	Rock variable and adjust for maximum output. Repeat adjustments of A5, A6,and A7.
400Ω carbon resistor	"	12.0MC	SW (Counterclockwise)	12.0MC	"	A9	Adjust for maximum output. Check to see if proper peak was obtained by tuning in image at approx. 11.1 MC. If image does not appear, realign at 12.0MC by opening A9 to next peak. Recheck image.
"	"	"	"	Tune for maximum output.	"	A10	Rock variable and adjust for maximum output.

HOWARD W. SAMS & CO., INC. • 2924 East Washington Street • Indianapolis 6, Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: STEWART-WARNER PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SK7	6SK7	8N	
2	1st Det.-Osc.	6SA7	6SA7	8R	
3	IF-2nd Det.-AVC	6SF7	6SF7	7AZ	
4	1st AF	6SK7	6SK7	8N	
5	Power Output	6K6GT	6K6GT	7S	
6	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: STEWART-WARNER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	20	400	502207	FP339	DY-313	EL-312	AF-44J	UP6CJ13	■ Filter
B	10	400							▲ "
C	20	25					PRS25-25		"
8	.05	600	502154	TP415	S-6-05	TC-15	684-05	DT6S5	Tone Compensation
9	.004	600	502150	TP404	S-6-004	TC-24	684-004	DT6D4	6K6 Plate Bypass
10	.02	400	502152	TP423	S-4-02	TC-12	484-02	DT4S2	Audio Coupling
11	.1	400	502410	TP428	S-4-1	TC-1	484-.1	DT4P1	Audio Plate Decoup.
12	.25	400	502405	TP430	S-4-25	TC-2	484-.25	DT4P25	Feedback
13	.004	600	502150	TP404	S-6-004	TC-24	684-004	DT6D4	Audio Coupling
14	.05	400	502157	TP426	S-4-05	TC-15	484-05	DT4S5	IF Screen Bypass
15	.01	400	502151	TP421	S-4-01	TC-11	484-05	DT4S5	Osc. Feedback
16	.1	200	502155	TP428	S-4-1	TC-1	484-.1	DT4P1	AVC Filter
17	.05	400	502157	TP426	S-4-05	TC-15	484-05	DT4S5	RF Screen Bypass
18	.05	400	502157	TP426	S-4-05	TC-15	484-05	DT4S5	RF Bypass Pwr. Supp.
19	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
20	110	500	502160	MC235	M0.5-31	1FM-31	1468-0001	5W5T1	Audio Plate Bypass
21	260	500	502271	MC240	M0.5-325	1FM-325	1468-00025	5W5T25	IF Bypass Diode
22	130	500	502201						Fixed Padder Cer.
23	39	500	502182						Fixed Trimmer "
24	50	500	502159	MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor
25	2	500	502411						Neutralizing Cer.
26	10	500	502295						RF Pri. Shunt Cer.
27	270	500	502161	MCB240	M0S.5-325	1FM-325	1469-00025	5R5T25	Fixed Tuning Osc. PB
28	1000	500	502165	MC255	M0.3-21	1FM-21	1467-001	1W5D1	Screen Bypass PB
29	150	500	502202						Fixed Padder Cer.

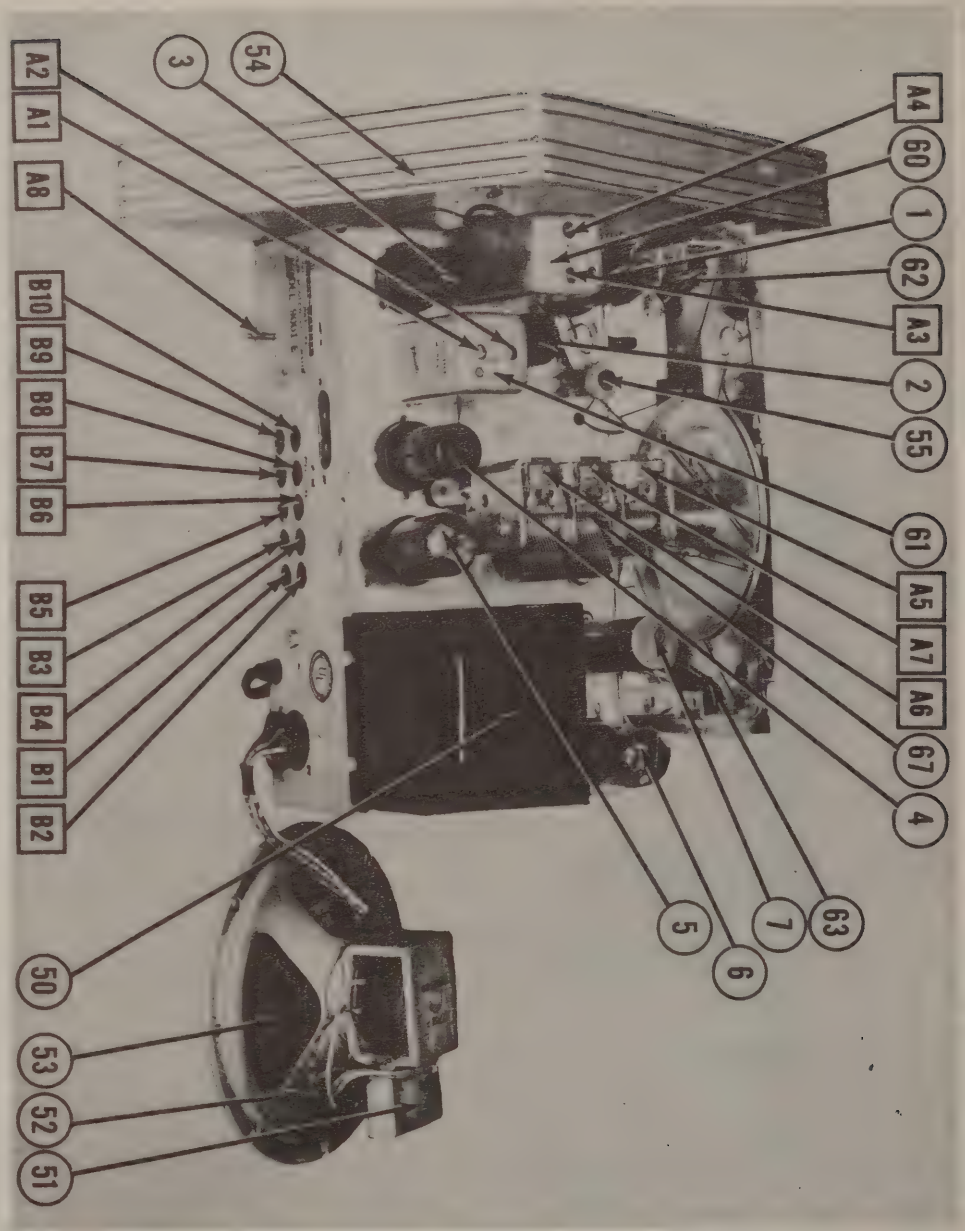
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: STEWART-WAR PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
30A	500KΩ	1	502148	MK401	D13-133	AM-60-Z	Volume Control
B	Shart		Not Req.	Not Req.	E	KSS-3	Attach to 30A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: STEWART-WARNER PART No.	IRC PART No.	IDENTIFICATION CODES
31	4.7 Meg.	¼	502468	BTS-4.7 Meg.	Yl.-Vi.-Grn. RF Grid
32	220Ω	¼	502127	BW-½-220	Red-Red-Br. RF Cathode
33	100KΩ	¼	502132	BTS-100K	Br.-Blk.-Yl. RF Screen Dropping
34	470KΩ	¼	502134	BTS-470K	Yl.-Vi.-Yl. AVC Network
35	22KΩ	¼	502130	BTS-22K	Red-Red-Or. Osc. Grid

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	PACKARD BELL PART No.	STANCOR PART No.	THORDARSON PART No.	
[illegible]	117VAC @ .57A	560VAC @ .07A	5.1VAC @ 1.8A	6.2VAC @ 3A	89003	P-6712	T-22R04	

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES*
	IMPEDANCE		DC RES.		PACKARD BELL PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI	SEC	PRI.	SEC.					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	89400	A-22011*	T-22S47		†Drill new mounting holes. *Use total primary winding.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			PACKARD BELL PART No.	JENSEN PART No.		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible] Mod. P6-V		Alternate Speaker
[illegible]	[illegible]	[illegible]	CONE HAS SPECIAL ADJUSTMENT FEATURE-ORDER FROM MANUFACTURER			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	PACKARD BELL PART No.	MEISSNER PART No.	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	BC Ant.Coil		[illegible]	[illegible]		
[illegible]	SW Ant.Coil		[illegible]	[illegible]		
114	BC RF Coil	[illegible]	[illegible]			
115	SW RF Coil	[illegible]	[illegible]			
116	BC Osc.Coil	1Ω	5.8Ω	29205	14-1040	
117	SW Osc.Coil		.2Ω	29201	14-1046	
118	Input IF	20.5Ω	20.1Ω		16-6658	
[illegible]	Output IF	21.9Ω			16-6670	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					PACKARD BELL PART No.		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]

PARTS LIST AND DESCRIPTIONS (Continued)

MISCELLANEOUS

ITEM No.	PART NAME	PACKARD-BELL PART No.	NOTES
121	PB Switch	86301	Selector
122	Switch	86001A	Band Change
123	Tuning Cap.	23500C	3 Gang Variable
A5	Trimmer Cap.	23401	BC Osc. Adj. 3-30 MMF.
A9	" "		SW " " " "
A6	Padder Cap.	24402	Osc. Pad 300-800 MMF.
A7	Trimmer Cap.	23400A	BC RF Adj. 3-30 MMF.
A8	Trimmer Cap.		[illegible] Adj. [illegible] MMF.
A10	Trimmer Cap.	23400A	SW RF Adj. 3-30 MMF.
A11	Trimmer Cap.		SW Ant. Adj. 3-30 MMF.
	Cabinet	21005D	Wood. Fabricoid Covered
	Recording Head	36019	
	Cartridge	36021	Recording
	Dial Scale	38002B	
	Knob	52001A	Round, Controls
	"	52014	Bar, Controls
	"	[illegible]	Push Buttons
	Microphone	570 RS	With Cable
	AC Motor	58001A	Recorder & Phono.
	Stylus	59002	
	Pick-up	63002A	Phono. Assy.
	Cartridge	63003A	Phono. Pick-up
	Plug	66005	Microphone
	Pointer Assy.	67001A	Dial Scale

DISASSEMBLY INSTRUCTIONS

1. Remove the four push-on type control knobs from dial.
2. Remove the five wood screws from the dial panel board.
3. Disconnect speaker plug from chassis.
4. Remove dial panel board and speaker from cabinet.
5. Disconnect the phono-pickup plug from chassis.
6. Disconnect the red and yellow antenna leads from terminal strip on chassis.
7. Remove screw holding black ground lead to chassis. Remove lead.
8. Disconnect phono-motor plug from top of chassis.
9. Disconnect the recorder pickup arm plug lead from top of chassis.
10. Remove four wood screws and washers holding speaker to dial board. Remove speaker.

AUTOMATIC HOME RECORDING INSTRUCTIONS

1. How to Install Stylus (Recording Needle):

   (a) Between thumb and forefinger, pick up pointed end of stylus.
   (b) Rotate until a flat surface is noted at colored end opposite point.
   (c) Insert colored end of stylus as far as possible into recording head with **flat surface facing the operator.**
   (d) Firmly tighten set screw on front of recording head, thus holding stylus in position.

IMPORTANT: To insure consistently good quality in your home recordings, inspection of the action of recording stylus (needle) at frequent intervals is recommended. When in perfect condition, threads coming from the cutting will be about the thickness of a human hair. If cuttings become thin and broken, it would indicate stylus is worn and needs replacing. Another indication of a poor recording needle is failure of the pickup arm to stay in groove cut by recording needle.

2. How to Place a Recording Disc on Turntable:

   A recording disc has two holes - one fits over the center post and the other over a small locking pin about one inch from center hole. Place disc on turntable and rotate until locking pin slips into hole.

3. Cutter Depth Pressure:

   Cutter Depth Pressure has been pre-set at the factory to insure correct groove depth in cutting good home recordings. Under normal conditions, further adjustment is not necessary, however should an adjustment be required, it can be made by regulating the pressure adjustment disc located under the cutter arm.

   TURN DISC CLOCKWISE TO INCREASE THE CUTTING DEPTH.

   TURN DISC COUNTERCLOCKWISE TO DECREASE THE CUTTING DEPTH.

4. Methode of Recording:

   The "Inside to Out" professional type recording is used on these models.

   First place recording disc on turntable, making sure locking pin is in place; set pointer of automatic cutter left to correct record blank size, start turntable by pushing switch to "on" position; place cutter head about one-fourth inch from edge of label as starting point. Record is complete when recording needle reaches point one-fourth inch from outside edge of record. At this point cutter arm will contact automatic cutter lift, raise from recording and continue to travel outward to its permanent position.

HOLDING DEVICES

Holding Devices: Model 1052-A PhonOcord is a portable model, therefore it is necessary that certain movable parts be locked in place.

The Microphone is held in place by a spring which fits securely over the head of the instrument.

The Cutter Head is held by a small spring which fits over the adjustment screw of the recording needle.

All other parts are held automatically.

PACKARD-BELL
MODEL 105C

NOTE: VOLTAGE & RESISTANCE READINGS TAKEN IN STANDARD BROADCAST POSITION

VOLTAGE READINGS

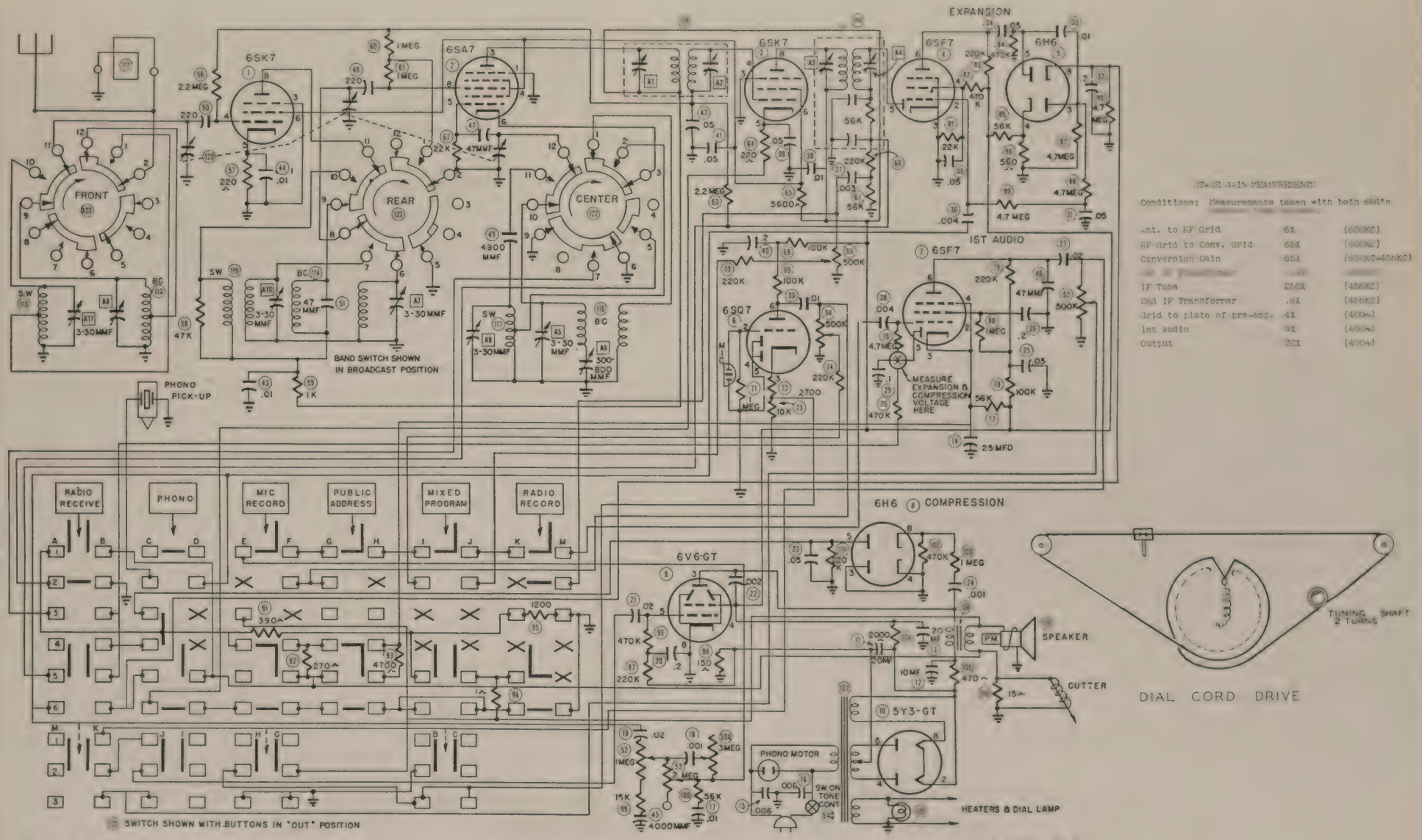
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0V.	0V.	0V.	0V.	2.8V DC	87 V. DC	6.3 VAC	87 V DC
2	6SA7	0V.	0V.	177V DC	97V DC	-3V DC	0V.	6.3VAC	-4V DC
3	6SK7	0V.	0V.	0V.	-2V DC	2.3V DC	97 V DC	6.3VAC	177 V DC
4	6SF7	0V.	-.25V DC	0V.	8.5V DC	-2V DC	105 V DC	6.3VAC	0V
5	6A6	0V.	0V.	0V.	1.6VDC	0V.	0V.	6VAC	.2VDC
6	6SQ7	0V.	0V.	.2V DC	0V.	0V.	42.5VDC	6.3VAC	0V
7	6SF7	0V.	0V.	5.8VDC	3.8V DC	-1V DC	7.3 VDC	6.3VAC	0V
8	6H6	0V.	0V.	0V.	0V.	-.1V DC	.2V DC	6VAC	3VDC
9	6V6GT	0V.	0V.	227V.DC	177V DC	-2.7VDC	-5V DC	6VAC	0V
10	5Y3GT	0V.	265VDC	0V.	270VAC	0V.	270VAC	0V.	265VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0Ω	0Ω	0Ω	4.5MEG	200Ω	30KΩ	1Ω	200KΩ
2	6SA7	0Ω	0Ω	25KΩ	30KΩ	2KΩ	1Ω	1Ω	4MEG
3	6SK7	0Ω	0Ω	0Ω	2.5MEG	240Ω	30KΩ	1Ω	25KΩ
4	6SK7	0Ω	12MEG	0Ω	22 KΩ	290KΩ	255KΩ	1Ω	0Ω
5	6H6	0Ω	0Ω	2.7MEG	500Ω	450KΩ	8MEG	1Ω	1.5MEG
6	6SQ7	0Ω	1MEG	11KΩ	0Ω	0Ω	240K	1Ω	0Ω
7	6SF7	0Ω	8MEG	1500Ω	1.1MEG	3.9MEG	330KΩ	1Ω	0Ω
8	6H6	0Ω	0Ω	0Ω	0Ω	216KΩ	3.6MEG	1Ω	430KΩ
9	6V6GT	0Ω	0Ω	25KΩ	25KΩ	700KΩ	24KΩ	1Ω	1Ω
10	5Y3GT	INF	25KΩ	INF	250Ω	INF	250Ω	INF	25KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



STAGE GAIN MEASUREMENTS

Conditions: Measurements taken with both sides

Ant. to RF Grid	6X	(600KC)
RF Grid to Conv. Grid	68X	(600KC)
Conversion Gain	65X	(600KC-455KC)
[illegible]	[illegible]	[illegible]
IF Tube	250X	(455KC)
2nd IF Transformer	.8X	(455KC)
Grid to plate of pre-amp.	4X	(400~)
1st Audio	9X	(400~)
Output	30X	(400~)

IF=455KC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

468-26

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		[illegible] PART No.	STANDARD REPLACEMENT		
1	RF Amp.	[illegible]	[illegible]7	[illegible]	
2	1st Det.-Osc.	[illegible]	[illegible]A7	[illegible]	
3	IF Amp. 2nd [illegible]	[illegible]	[illegible]	7A2	
4	[illegible]	[illegible]	[illegible]	[illegible]	
5	1st AF	[illegible]	[illegible]	[illegible]	
6	Power Output	[illegible]7	[illegible]7	[illegible]	
7	Rectifier	[illegible]	[illegible]	[illegible]	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT.	[illegible] PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
1A	20	450	[illegible]	[illegible]	[illegible]	[illegible]	AP-447	UP6CJ13	■ Filter
1	10	450							▲ "
C	20	[illegible]					PRS25-25		"
8	.05	600	[illegible]	[illegible]	[illegible]	TC-13	684-05	DT6S5	Tone Compensation
9	.004	500	[illegible]	[illegible]	[illegible]	TC-24	684-004	DT6D4	6K6 Plate Bypass
10	.02	400	[illegible]	[illegible]	[illegible]	TC-12	484-02	DT4S2	Audio Coupling
11	.1	400	[illegible]	[illegible]	[illegible]	TC-1	484-.1	DT4P1	Audio Plate Decoup.
12	.25	400	[illegible]	[illegible]	[illegible]	TC-4	484-.25	DT4P25	Feedback
13	.004	600	[illegible]	[illegible]	[illegible]	TC-24	684-004	DT6D4	Audio Coupling
14	.05	400	[illegible]	[illegible]	[illegible]	TC-13	484-05	DT4S5	IF Screen Bypass
15	.01	400	[illegible]	[illegible]	[illegible]	TC-11	484-05	DT4S5	Osc. Feedback
16	.1	400	[illegible]	[illegible]	[illegible]	TC-1	484-.1	DT4P1	AVC Filter
17	.05	400	[illegible]	[illegible]	[illegible]	TC-13	484-05	DT4S5	RF Screen Bypass
18	.05	400	[illegible]	[illegible]	[illegible]	TC-13	484-05	DT4S5	RF Bypass Pwr. Supp.
19	.05	400	[illegible]	[illegible]	[illegible]	TC-13	484-05	DT4S5	AVC Filter
20	150	300	[illegible]	[illegible]	MO.8-81	1FM-81	1468-0001	5W5T1	Audio Plate Bypass
21	100	600	[illegible]	[illegible]	MO.8-[illegible]	1FM-[illegible]	1468-00025	5W5T25	IF Bypass Diode
22	100	600	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Fixed Padder Cer.
23	100	600	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Fixed Trimmer "
24	50	500	[illegible]	[illegible]	MO.8-45	1FM-45	1468-00005	5W5C5	Osc. Grid Capacitor
25	5	500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Neutralizing Cer.
26	5	500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	RF Pri. Shunt Cer.
27	15	500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Fixed Tuning Osc. PB
28	270	600	[illegible]	[illegible]	MOB.8-[illegible]	1FM-[illegible]	1469-00025	5R5T25	Fixed Tuning Osc. PB
29	[illegible]	500	[illegible]	[illegible]	MO.8-21	1FM-21	1467-001	1W5D1	Screen Bypass PB
30	[illegible]	500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Fixed Padder Cer.

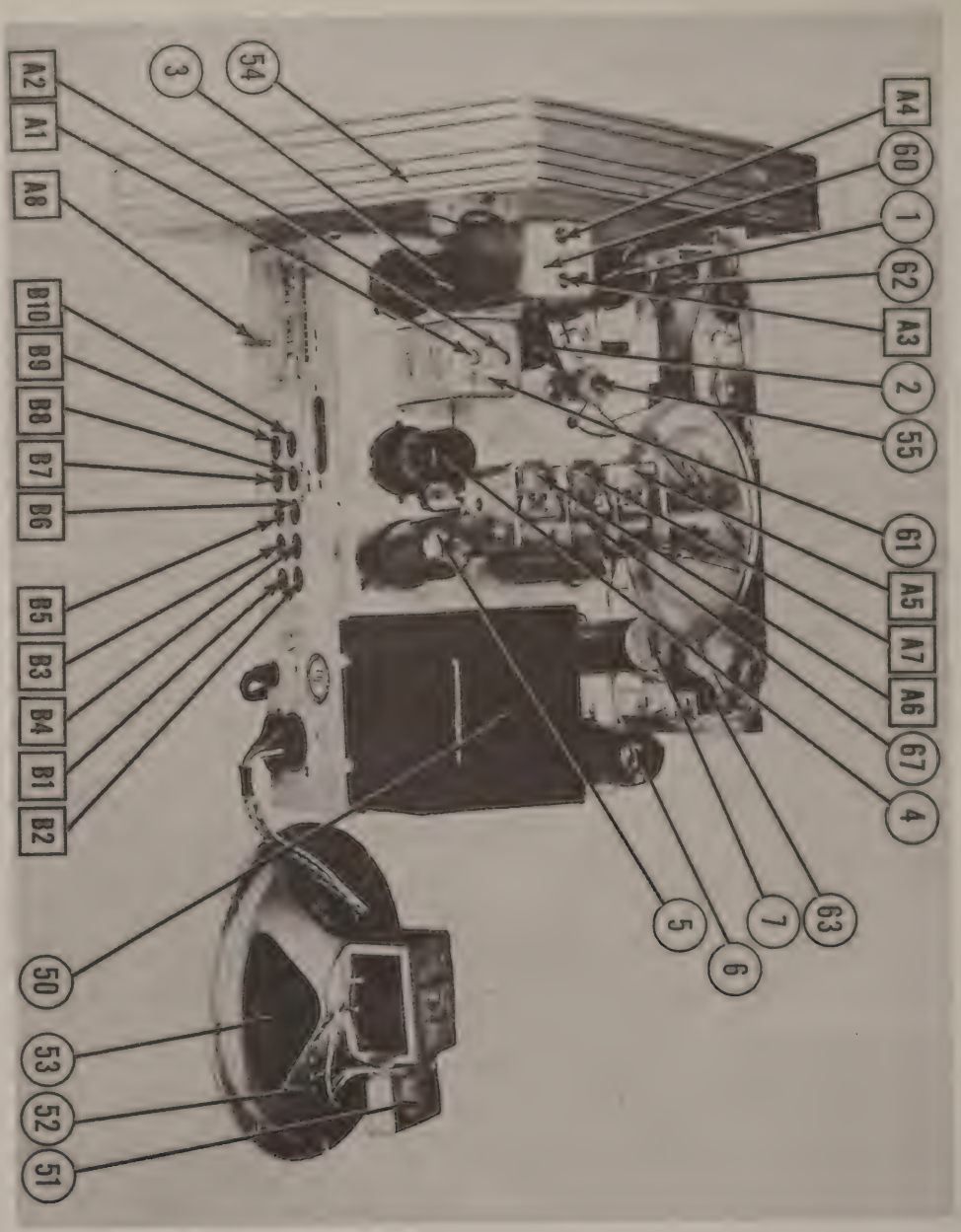
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	[illegible] PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
1	[illegible]	1	[illegible]	[illegible]	D13-133	AM-60-Z	Volume Control
2	[illegible]		Not Req.	Not Req.	E	KSS-3	Attach to 30A per instructions
3	[illegible]		" "	MS8	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	[illegible] PART No.	IRC PART No.	
31	4.7 Meg.	[illegible]	[illegible]	BTS-4.7 Meg.	Yl.-Vi.-Grn. RF Grid
32	[illegible]	[illegible]	[illegible]	[illegible]	Red-Red-Br. RF Cathode
33	100K	[illegible]	[illegible]	BTS-100K	Br.-Blk.-Yl. RF Screen Dropping
34	470K	[illegible]	[illegible]	BTS-470K	Yl.-Vi.-Yl. AVC Network
35	[illegible]	[illegible]	[illegible]	BTS-22K	Red-Red-Or. Osc. Grid

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA RECORDIO PART No.	REPLACEMENT DATA IRC PART No.	IDENTIFICATION CODES
35	22KΩ	½		BTS-22K	Red-Red-Or. Antenna Shunt
45	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Oscillator Grid
34	330Ω	2		BW-½-330	Or.-Or.-Br. " Cathode
42	[illegible]	½		[illegible]	Red-Red-Or. " Plate Dropping
36	560Ω	2	53-2600	BTS-560	Grn.-Blue-Br. IF Cathode
27	[illegible]	1		[illegible]	Or.-White-Or. " Screen Dropping
20	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Diode Load
50	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
40	[illegible]	½		[illegible]	Or.-White-Red 1st AF Cathode
41	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Level Indicator Diode Load Note 1.
44	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AF Coupling
48	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Voltage Dropping
43	[illegible]	½		BTS-220K	Red-Red-Yl. 1st AF Plate Load
46	68KΩ	½		BTS-68K	Blue-Gray-Or. AF Coupling
46	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Level Indicator Network Note 2.
47	3.3 Meg.	½		BTS-3.3 Meg.	Or.-Or.-Grn. AF Coupling
49	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. " "
49	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. 2nd AF Grid
51	[illegible]	½		[illegible]	Or.-Or.-Red " " Cathode
52	150Ω	½		BTS-150K	Br.-Grn.-Yl. " " Plate Load
53	10KΩ	½		BTS-10K	Br.-Blk.-Or. Feedback
54	470Ω	½		[illegible]	Yl.-Vi.-Yl. Output Grid
54	330Ω	2		GT-2-330	Or.-Or.-Br. " Cathode
56	3.3 Meg.	½		BTS-3.3 Meg.	Or.-Or.-Grn. Phono Shunt
56	3.3 Meg.	½		[illegible]	Or.-Or.-Grn. Series Phono
57	1.5 Meg.	½		BTS-1.5 Meg.	Br.-Grn.-Grn. Phono Voltage Divider
58	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. " Load
59	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue Mike Amplifier Grid
60	220KΩ	½		BTS-220K	Red-Red-Yl. " " Plate Load
61	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. " " Screen Dropping
64	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Level Indicator Plate Load
64	1000Ω	½		BTS-1000	Br.-Blk.-Red " " Cathode
64	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Cutter Amplifier Grid
65	1000Ω	½		BTS-1000	Br.-Blk.-Red " " Cathode
66	6.8 Meg.	½		BTS-6.8 Meg.	Blue-Gray-Grn. Level Indicator Voltage Divider
67	10Ω	1		BW-1-10	Br.-Blk.-Blk. Filament Dropping

Note 1: Not used in all models.
Note 2: Some models use a 3.3 Meg. resistor in this application. Replacement same as item 47.

FILTER CHOKE

ITEM NO.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000∼)	REPLACEMENT DATA RECORDIO PART NO.	REPLACEMENT DATA STANCOR PART NO.	REPLACEMENT DATA THORDARSON PART NO.	INSTALLATION NOTES
38	.063A	400Ω	11 Henries		C-1002½	T-20C52	$Drill one new mounting hole.

Filter Choke is not used in models with dynamic speakers.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA RECORDIO PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDASON PART No.	
69	117VAC @ .210A	385 V.C.T. @ .063A	5.2VAC @ 1.8A	6.4VAC @ 2.7A		P-6312	T-22R04	

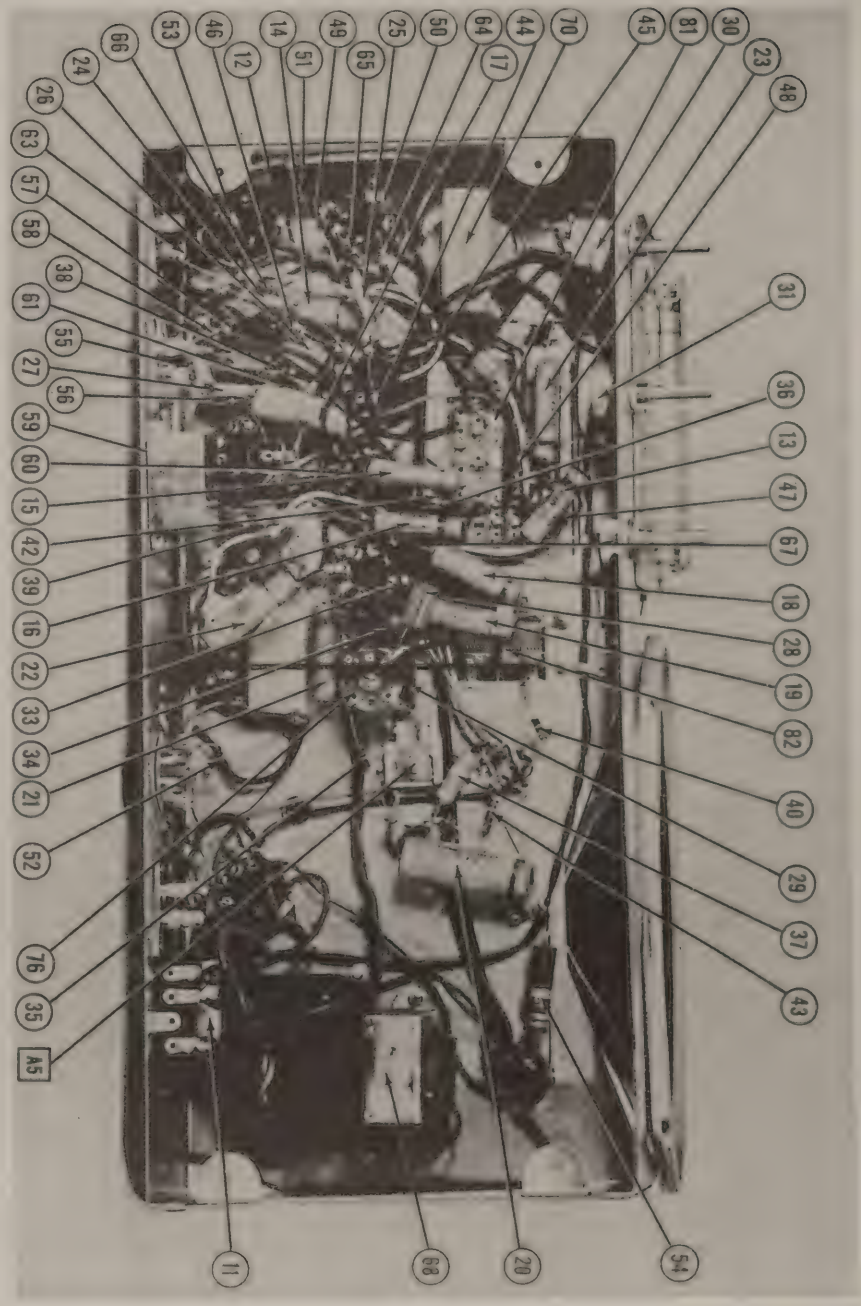
TRANSFORMER (CUTTER)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA RECORDIO PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDAR'N PART No.		INSTALLATION NOTES
70	[illegible]	[illegible]	[illegible]	[illegible]		A-3[illegible]9			$Drill one new mounting hole.

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA RECORDIO PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDAR'N PART No.		INSTALLATION NOTES
71	[illegible]	[illegible]	[illegible]	[illegible]		A-3[illegible]	T-[illegible]		$Drill one new mounting hole.

CHASSIS—BOTTOM VIEW



SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA RECORDIO PART No.	REPLACEMENT DATA JENSEN PART No.		INSTALLATION NOTES
72	FIELD [illegible]	VC IMP. 3.6Ω				Some models use dynamic speaker
73	CONE DIA. 8"x8"	VC DIA. 3/4"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA RECORDIO PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
74	Loop Ant.	0Ω	.8Ω			
75	Loading Coil	4Ω				
76	Osc. Coil	3Ω	4.5Ω		14-1040	
77	Input IF	11.6Ω	11Ω	68-3001A	16-6658	
78	Output IF	14.8Ω		68-3002A	16-6670	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA PART No.		INSTALLATION NOTES
79	Bayonet	6-8	0.25	Blue			Type 44
80	Bayonet	6-8	0.25	Blue			Type 44

MISCELLANEOUS

ITEM No.	PART NAME	RECORDIO PART No.	NOTES
81	PB Assby.		
82	Tuning Cap.		2 Gang Variable Cap.

MAINTENANCE

All adjustments for the recording mechanism were properly set by the manufacturer. In case some of the adjustments have been tampered with or damaged, the proper procedures for setting the adjustment correctly are given below.

DEPTH OF CUT

The hardness of the coating on recording discs varies with different manufacturers. This RECORDIO has been adjusted to cut RECORDIO DISCS properly. In case other discs are used, it might be necessary to readjust the depth of cut.

When the machine is cutting correctly, the groove width is slightly wider than the width of the "land" or uncut record material between grooves.

The ratio of groove to land widths should not be greater than 60% groove, 40% land, nor less than 50% groove, 50% land. The use of an ordinary reading glass will assist in making this adjustment.

1. In adjusting the groove width, it is well to make a trial cut [illegible] grooves (volume control at minimum), using a new cutting needle. Making this trial cut into the record surface without modulation results in a straight groove of constant width, and also constant "land" width between grooves, whereas, modulation of the grooves causes them to assume a "wavy" shape, making it somewhat difficult to determine the correct groove width.
   A NEW RECORDIOPOINT CUTTING NEEDLE, OR ONE KNOWN TO BE IN PERFECT CONDITION, SHOULD BE USED IN MAKING DEPTH OF GROOVE ADJUSTMENTS, AS TURNING THE ADJUSTING SCREW WILL HAVE LITTLE OR NO EFFECT UPON THE GROOVE DEPTH, IF THE NEEDLE IS DULL.
2. Before making any change in the adjustment provided for regulating the depth of cut, the height of the recording arm off the turntable surface (arm lowered to recording position) should be observed. The distance between the lower edge of the nose of the arm and the turntable surface should be 5/16 inch.

   REMOVE CUTTING NEEDLE BEFORE MAKING THIS MEASUREMENT.

   As the arm height has a definite bearing upon the uniformity of the groove cut into the record, this is very important, and the 5/16 inch measurement should be made with an accurately calibrated steel scale. Due to the possibility of the recording arm having been handled somewhat roughly in raising and lowering the arm, the arm height may be found to be incorrect, and an adjustment of the ARM HEIGHT ADJUSTMENT SCREW should be made so that the lower edge of the front end of the arm is EXACTLY 5/16 inch. To make this adjustment, raise the arm and loosen the lock nut which holds the adjusting screw in position. Turning the screw to the left raises the arm and to the right lowers the arm.
3. The depth of cut adjusting screw is located to the rear on the top of the recording arm. Turning the screw to the right (clockwise) increases the depth of cut, and turning the screw to the left (counter-clockwise) decreases the depth of cut. One turn of the adjusting screw makes a noticeable difference in the depth of the groove, therefore, the adjustments should be made in quarter or half turns, rather than in complete turns either way.

SHAVING COLLECTOR ADJUSTMENT

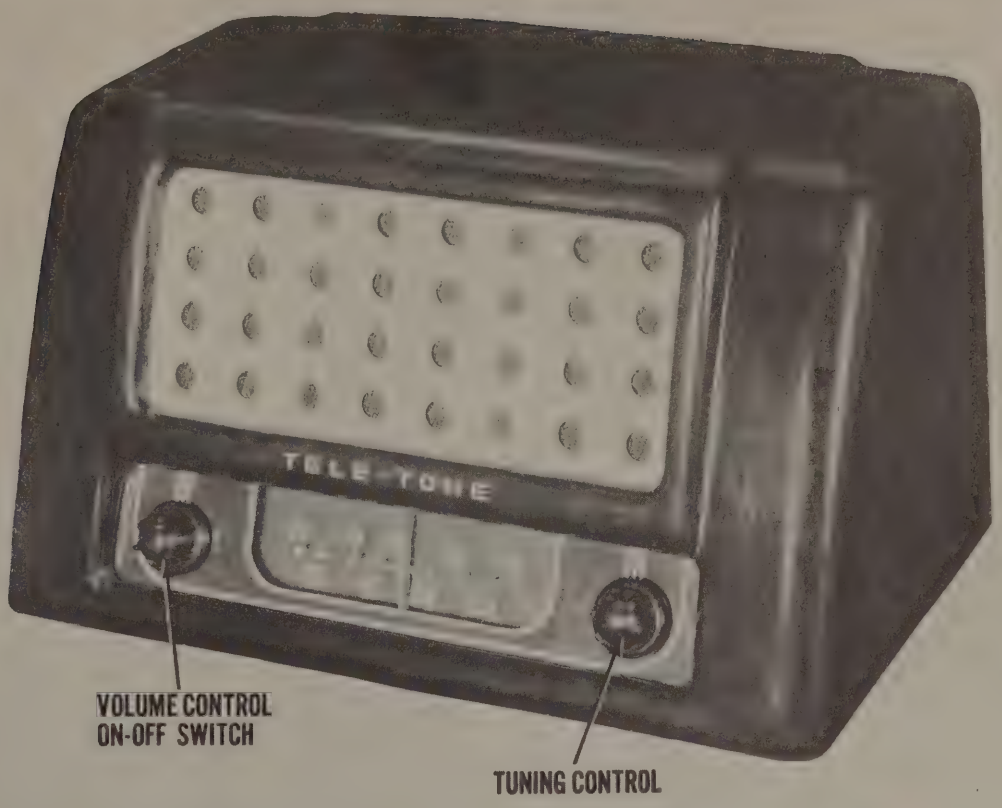
As the record is being made, a small shaving will be cut which is guided toward the center of the turntable by the rubber finger attached to the recording arm. The correct setting of this finger is such that the tip slightly touches the record surface. If re-adjustment is necessary, loosen retaining screw, re-set finger and tighten screw.

CUTTING HEAD LEADS

1. Observe that the leads connecting to the cutting head are properly placed within the arm so as not to interfere with the cutting head balance spring. Also, the wires should not be permitted to droop (arm horizontal) so that they will rub on the turntable.
2. The connecting wires from the cutting head should not be allowed to double up between the arm and arm platform, but should feed freely through the hole in the platform as the arm is lowered. Otherwise, the doubled up wires may prevent the arm from coming to rest on the head of the height adjustment screw.

PLAYBACK NEEDLE WEIGHT AND ADJUSTMENT

The weight of the playback needle on the record should be approximately 1.3 ounces. The screw located on the underside at the rear of the playback arm provides a means to regulate the needle weight. Turning this screw to the right decreases the weight and to the left increases the weight. A postal scale, hooked to the front edge of the playback arm can be used to check the needle weight. The arm should be raised just off the record surface when checking the needle weight. This adjustment has been made at the factory. Readjustment will be necessary only in case of damage.



TELETONE
MODEL 109

TELETONE
MODEL 109

TELETONE MODEL 109

TRADE NAME	Teletone Model 109 (Chassis Series J)
MANUFACTURER	Teletone Radio Corp., 609 W. 51st St., New York, N.Y.
TYPE SET	AC - DC Superheterodyne - Self Contained Loop Antenna
TUBES (FIVE)	Types, 12BE6 Converter, 12BA6 IF Amp., 12AT6 Det.-AVC-AF, 50B5 Power Output, 35W4 Rectifier
POWER SUPPLY	105 - 125 Volts AC-DC
TUNING RANGE—BROADCAST	530-1700KC RATING .235 Amps. @ 117VAC

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer at the last reference mark at the left end of the dial. Use isolation trans. if available. If not, connect capacitor in series with the low side of the signal generator and B-. Volume control at maximum volume and output from signal generator no higher than necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to stator of rear section of variable. Low side to B-.	455KC	High freq. end.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation trans. is not used, reduce dummy ant. to .001 MFD. to reduce excessive hum modulation.
200 MMF	High side to ext. ant. lead. Low side to chassis.	1500KC	1500KC	"	A5	Adjust for maximum output.
200 MMF	"	"	"	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: TELETONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12BE6	12BE6	7CH	
2	IF Amp.	12BA6	12BA6	7BK1	
3	Det.-AVC-AF	12AT6	12AT6	7BT	
4	Power Output	50B5	50B5	7BZ	
5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TELETONE PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	20	150		TN129	DHN-2x20-150	TA-220	PRSA150-20-20	EZ42215	Filter - Red
B	20	150							" - Green
C	20	150			DH-20-150	UT-201	PRS150-20		" - Blue
7	.02	400		TP423	S-4-02	TC-12	484-02	DT4S2	Rect. Bypass
8	.02	400		TP423	S-4-02	TC-12	484-02	DT4S2	50B5 Plate Bypass
9	.01	400		TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
10	.005	600		TP408	S-6-005	TC-25	684-905	DT6D5	" "
11	.05	400		TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
12	.05	200		TP426	S-4-05	TC-15	484-05	DT4S5	Line Isolating
13	220	500		MC237	M0.5-32	1FM-32	1468-0002	5W5T2	IF Bypass Diode

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TELETONE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
14A	500KΩ	1	A-VC-1	MR48*	D13-133*	M-60-Z*	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 14A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

*Install a 47KΩ resistor in series with the right hand terminal of the control and the lead connecting to the same terminal of the original control. (Control viewed from shaft side, terminals down.)

RESISTORS

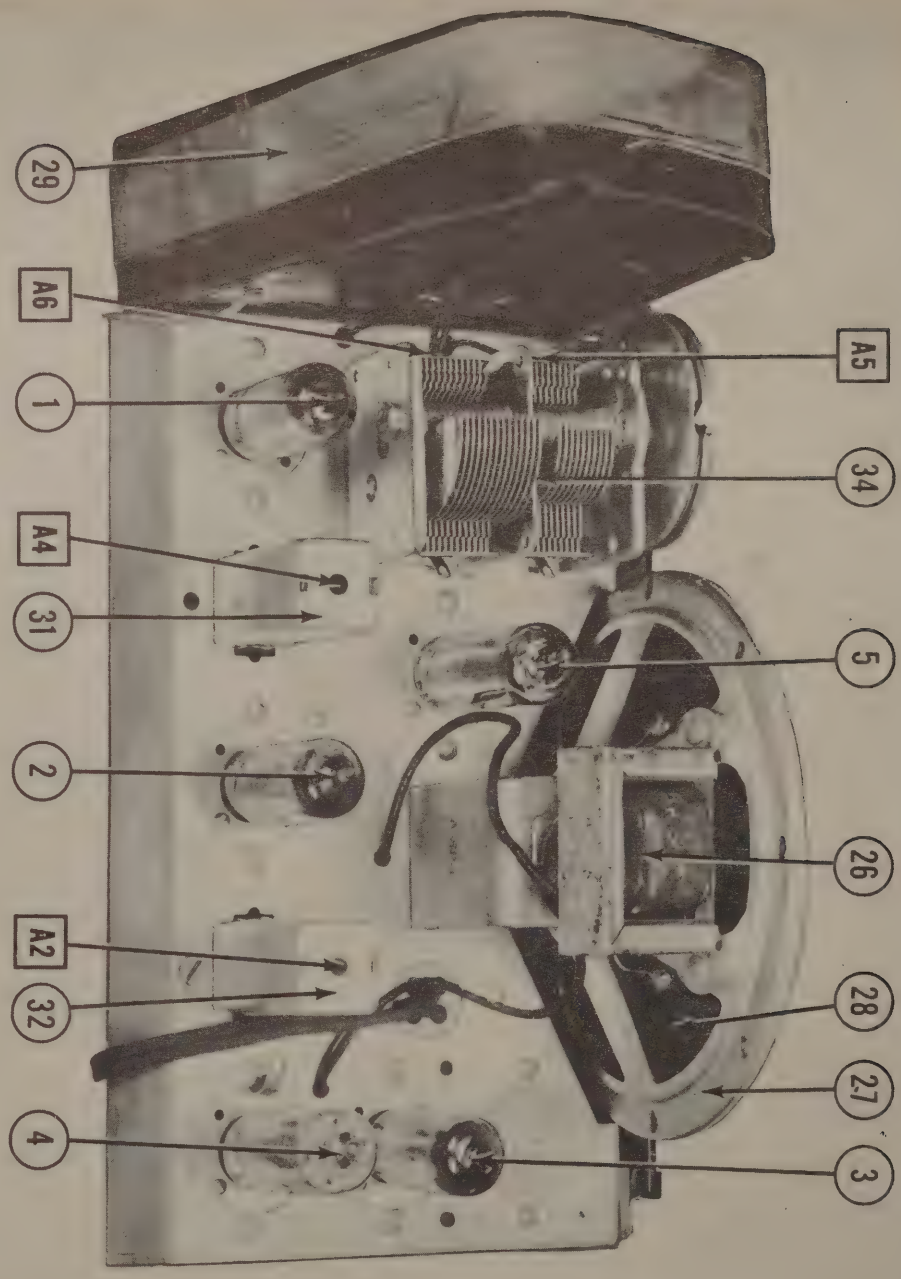
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TELETONE PART No.	IRC PART No.	IDENTIFICATION CODES
15	22KΩ	½		BTS-22K	Red-Red-Or. Osc. Grid
16	150Ω	½		BW-½-150	Br.-Grn.-Br. IF Cathode
17	47KΩ	½		BTS-47K	Yl.-Vi.-Or. IF Filter-See Note 1
18	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
19	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
20	220KΩ	½		BTS-220K	Red-Red-Yl. 1st AF Plate Load
21	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
22	150Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
23	100Ω	½		BW-½-100	Br.-Blk.-Br. Filter
24	1500Ω	½		BTS-1500	Br.-Grn.-Red Filter
25	18Ω	½		BW-½-18	Br.-Gray-Blk. Surge Limiter

Note 1 - Not used in all models.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: TELETONE PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
26	2350Ω	3.2Ω	179Ω	.6Ω	Part of A-SP-1	A-3876	T-13S39		

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA TELETONE PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-105		
27	PM	3.2Ω	A-SP-1	Mod. P5-X		
	CONE DIA.	VC DIA.				
28	4-5/8"	1/2"	NOT READILY REPLACEABLE - USE COMPLETE SPEAKER UNIT			

R F COILS

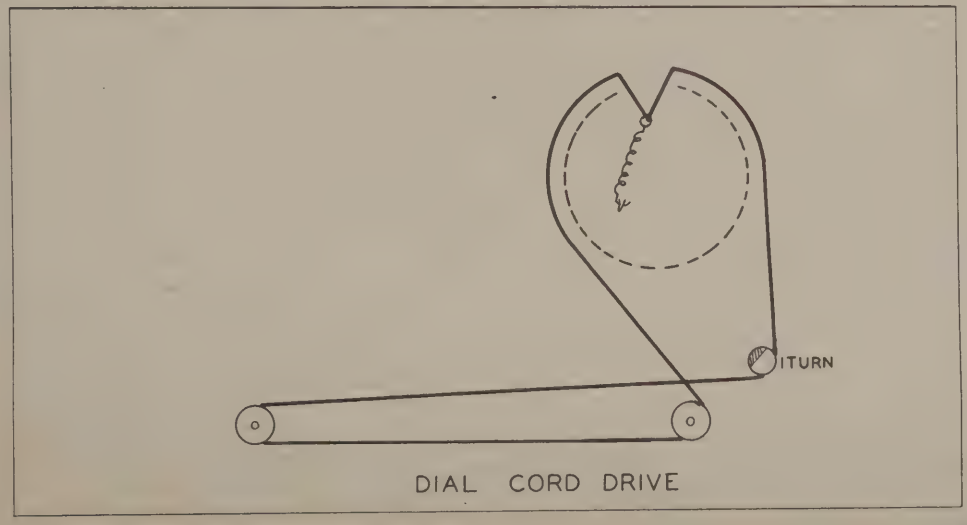
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA TELETONE PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
29	Loop Ant.	.3Ω	1.3Ω		14-1040	Add 50 MMFD cap. from grid to high side of tuning cap.
30	Osc. Coil	.7Ω	6.7Ω			
31	Input IF	17Ω	17Ω		16-6658	
32	Output IF	15.5Ω	15.5Ω		16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA TELETONE PART No.		INSTALLATION NOTES
33	Bayonet	6-8	0.15	Brown			Type 47

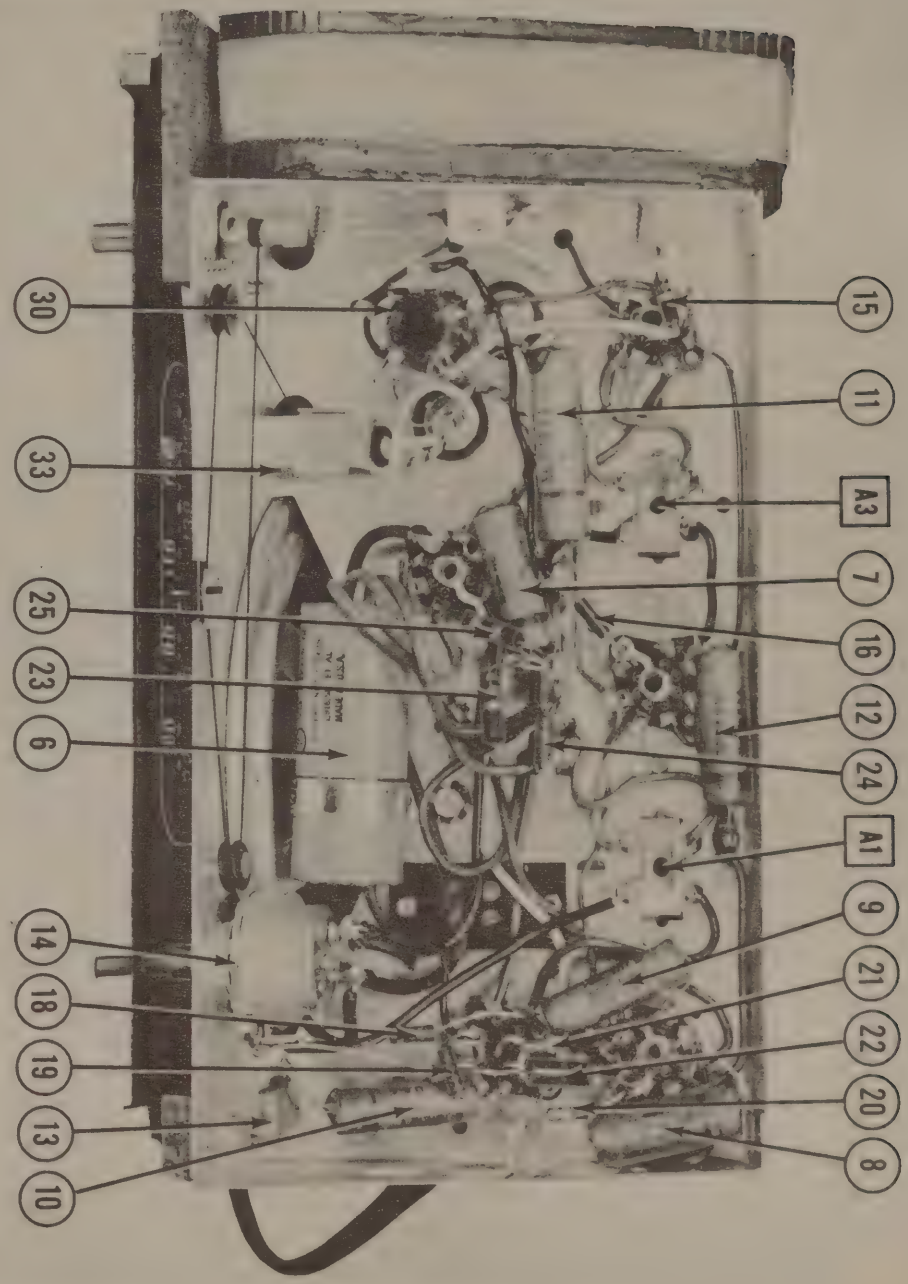
MISCELLANEOUS

ITEM No.	PART NAME	TELETONE PART No.	NOTES
34	Tuning Cap.		2 Gang Variable Cap.

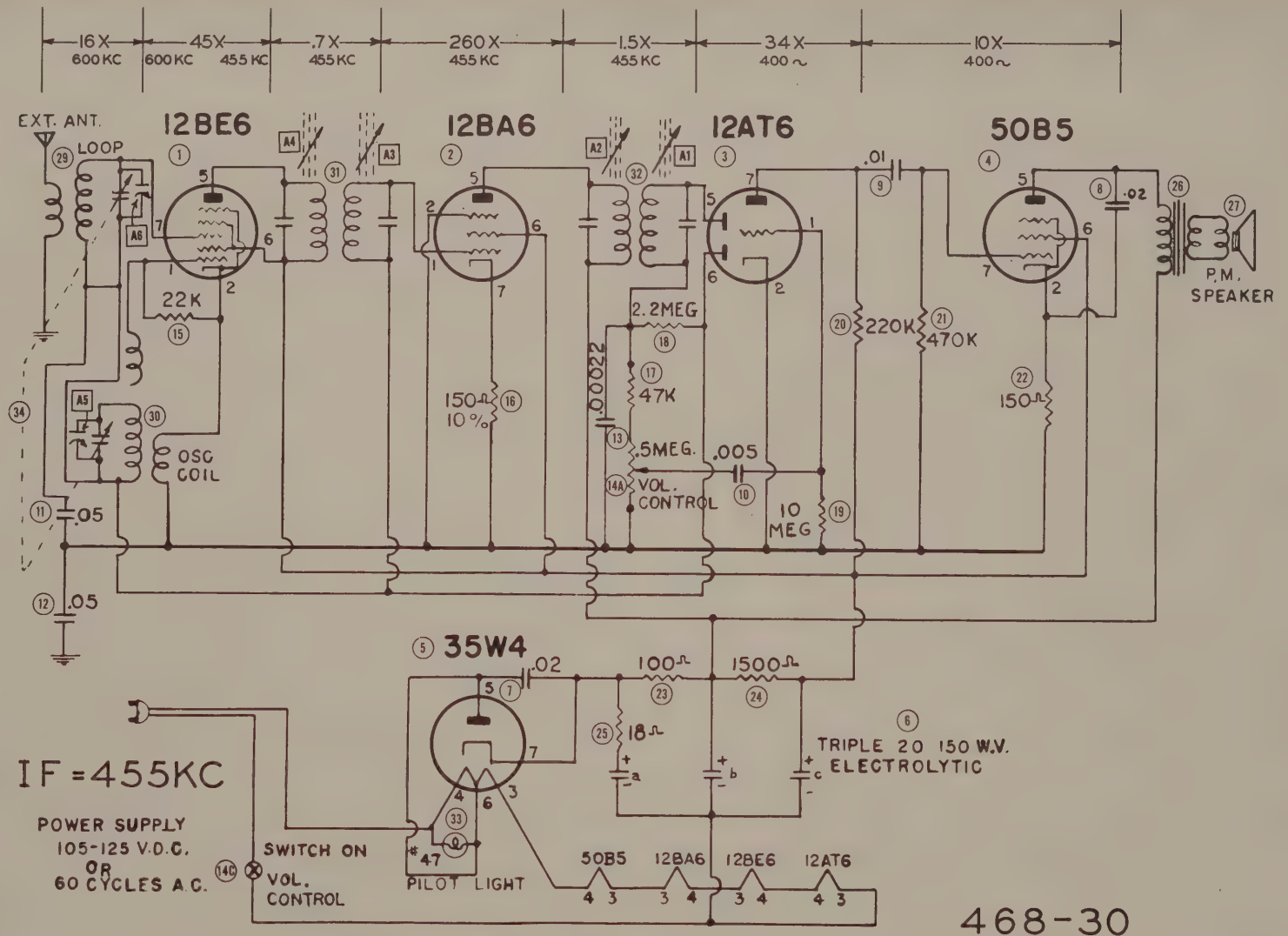


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



TELETONE MODEL 109
TELETONE MODEL 109



468-30

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	-2.7V.DC	0V.	24V.AC	12.5V.AC	92V.DC	92V.DC	-5V.DC
2	12BA6	-.5V.DC	0V.	35.5V.AC	24V.AC	113V.DC	92V.DC	1.3V.DC
3	12AT6	-.65V.DC	0V.	0V.	12.5V.AC	-.45V.DC	-5V.DC	52V.DC
4	50B5	0V.	5.6V.DC	87V.AC	35.5V.AC	107V.DC	92V.DC	0V.
5	35W4	117V.DC	0V.	87V.AC	117V.AC	113V.AC	113V.AC	117V.DC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

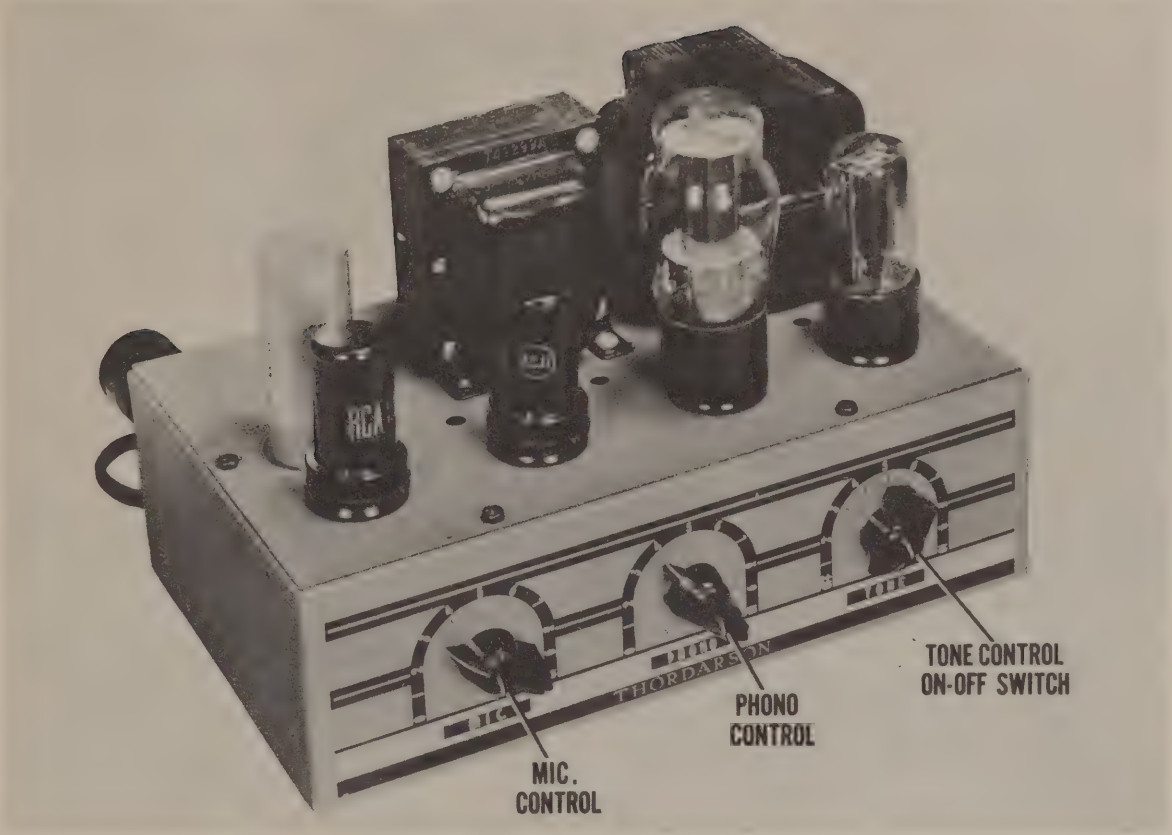
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	20 KΩ	.5Ω	22Ω	11.5Ω	125KΩ	125KΩ	2.7MEG.
2	12BA6	2.7 MEG.	0Ω	33Ω	22Ω	125KΩ	125KΩ	140Ω
3	12AT6	10MEG.	0Ω	0Ω	11.5Ω	430KΩ	2.7MEG.	345KΩ
4	50B5	470KΩ	122Ω	80Ω	33Ω	125KΩ	125KΩ	470KΩ
5	35W4	125KΩ	INF.	80Ω	108Ω	105Ω	105Ω	125KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

THORDARSON
MODEL T-30W08A



THORDARSON
MODEL T-30W08A

THORDARSON MODEL T-30W08A

TRADE NAME	Thordarson Model T-30W08A
MANUFACTURER	Thordarson Electric Mfg. Div. of Maguire Industries Inc. 500 West Huron Street, Chicago, Ill.
TYPE SET	AC Operated 8 Watt Beam Power Amplifier
TUBES (FOUR)	Types, 6SJ7 Microphone Amp., 6SJ7 AF Amp., 6L6/G Power Output, 5Y3GT/G Rectifier.
POWER SUPPLY	117 Volts AC
RATING .630 Amps. @ 117V AC	

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SJ7	0V.	0V.	.9V.DC	-1V.DC	.9V.DC	17V.DC	6.4V.AC	83V.DC
2	6SJ7	0V.	0V.	1V.DC	0V.	1V.DC	18V.DC	6.4V.AC	87V.DC
3	6L6/6L6G	0V.	0V.	330V.DC	295V.DC	0V.	350V.DC	6.4V.AC	18V.DC
4	5Y3-G	0V.	380V.DC	0V.	360V.AC	0V.	360V.AC	0V.	380V.DC

NOTE: VOLTAGE AND RESISTANCE TAKEN WITH CONTROLS IN COUNTER CLOCKWISE POSITION.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SJ7	0Ω	0Ω	2.2KΩ	2.9MEG.	2.2KΩ	3.4MEG.	.2Ω	555KΩ
2	6SJ7	0Ω	0Ω	2.4KΩ	220KΩ	2.4KΩ	3.4MEG.	.2Ω	555KΩ
3	6L6/6L6G	0Ω	0Ω	28KΩ	38KΩ	225KΩ	28KΩ	.2Ω	230Ω
4	5Y3-G	INF.	28KΩ	INF.	175Ω	INF.	165Ω	0Ω	28KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt: AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: THORDARSON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Mic. Amp.	6SJ7	6SJ7	8N	
2	AF Amp.	6SJ7	6SJ7	8N	
3	Power Output	6L6/6L6G	6L6/6L6G	7AC	
4	Rectifier	5Y3GT/G	5Y3GT/G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: THORDARSON PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
5A	10	450	CE2004	FP332	DY-316	EL-202	AF22J4A	UP6CJ12	● Filter
B	10	450							■ "
C	20	25							▲ Cath. Bypass
6A	10	450	CE2004	FP332	DY-316	EL-202	AF22J4A	UP6CJ12	● Filter
B	10	450							■ "
C	10	450							▲ Cath. Bypass
7	25	25	CE25-256	TC26	M-25-25	TA-25	PRS25-25	BR252A	" "
8	.05	400	CP401-503	TP426	S-4-05	TC-15	484-05	DT4S5	Audio Coupling
9	.005	400	CP401-502	TP408	S-6-005	TC-25	484-005	DT6D5	Tone Compensation
10	.1	400	CP401-104	TP428	S-4-1	TC-1	484-.1	DT4P1	Audio Screen Bypass
11	.05	400	CP401-503	TP426	S-4-05	TC-15	484-05	DT4S5	Audio Coupling
12	.1	400	CP401-104	TP428	S-4-1	TC-1	484-.1	DT4P1	6SJ7 Screen Bypass

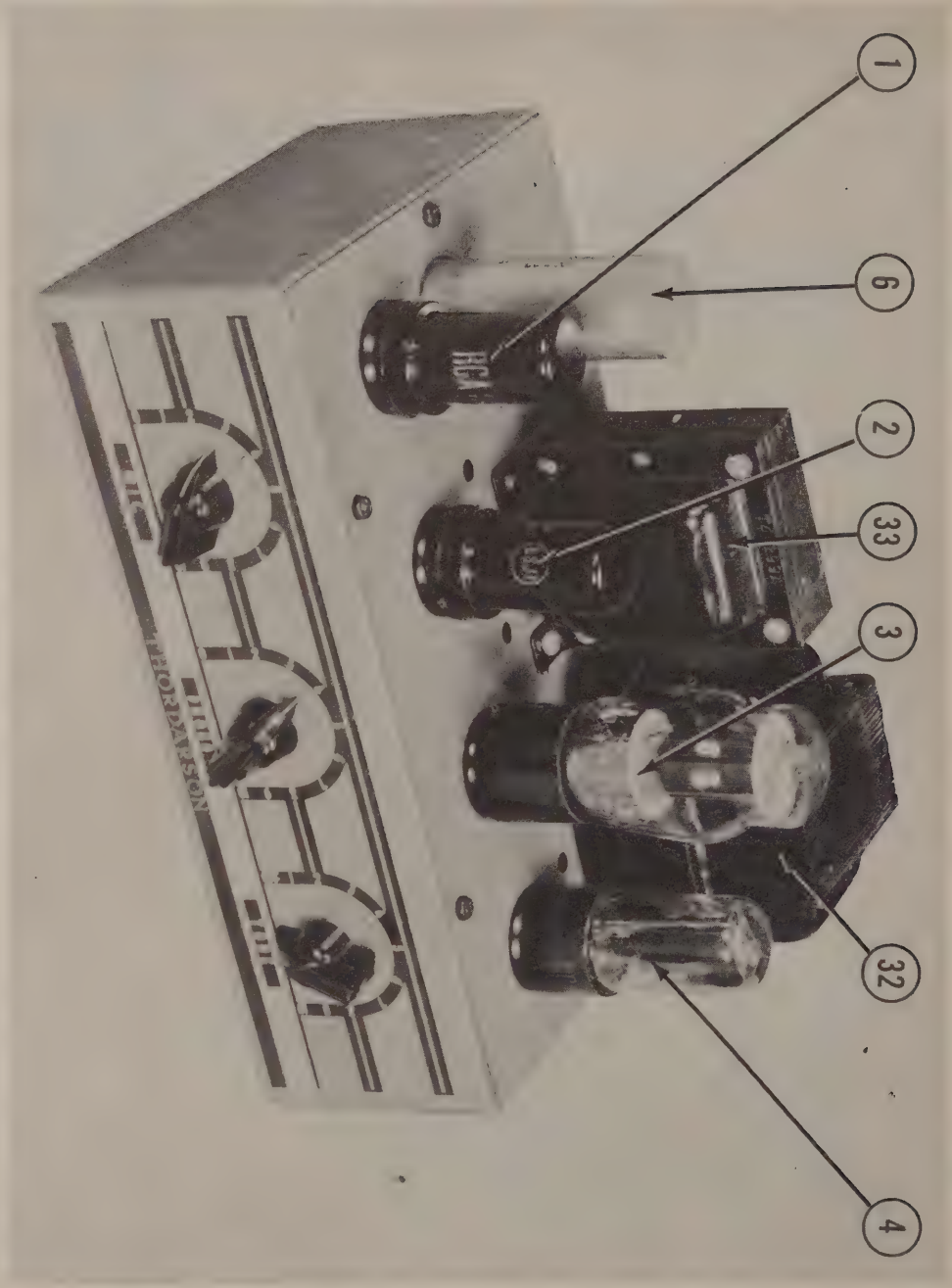
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: THORDARSON PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
13A	250KΩ	1	RCP-1-254-S	MR44	D13-130	M-64-Z	Tone Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 13A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
14A	1 Meg.	1	RCP-1-105	MR53	D13-137	M-63-Z	Phono Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 14A per instructions
15A	1 Meg.	1	RCP-1-105	MR53	D13-137	M-63-Z	Microphone Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 15A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: THORDARSON PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
16	2.7 Meg. Ω	1/3	RC1/3-225	BTS-2.7 Meg.	Red-Vi.-Yl. 1st AF Grid
17	2200Ω	1/2	RC1/2-222	BTS-2200	Red-Red-Red 1st AF Cathode
18	3.3 Meg. Ω	1/2	RC1/2-335	BTS-3.3 Meg.	Or.-Or.-Grn. 1st AF Screen Dropping
19	470KΩ	1/2	RC1/2-474	BTS-470K	Yl.-Vi.-Yl. 1st AF Plate Load
20	470KΩ	1/2	RC1/2-474	BTS-470K	Yl.-Vi.-Yl. 2nd AF Grid
21	470KΩ	1/2	RC1/2-474	BTS-470K	Yl.-Vi.-Yl. 2nd AF Grid
22	500Ω	1/2	RC1/2-471	BTS-470	Grn.-Blk.-Br. 2nd AF Cathode
23	2200Ω	1/2	RC1/2-222	BTS-2200	Red-Red-Red 2nd AF Cathode
24	3.3 Meg.	1/2	RC1/2-335	BTS-3.3 Meg.	Or.-Or.-Grn. 2nd AF Screen Dropping
25	470KΩ	1/2	RC1/2-474	BTS-470K	Yl.-Vi.-Yl. 2nd AF Plate Load
26	250Ω	10	RW-10-251	AB-250	Output Cathode
27	10KΩ	1	RC1-103	BTA-10K	Br.-Blk.-Or. Output Screen Dropping
28	100KΩ	1/2	RC1/2-104	BTS-100K	Br.-Blk.-Yl. Feedback
29	47KΩ	1/2	RC1/2-473	BTS-47K	Yl.-Vi.-Or. Voltage Dropping
30	40KΩ	10	RC-10-403	DG-40K	Bleeder

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA			INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D.C. RESISTANCE	INDUCTANCE (0 CURRENT 1000~)	THORDARSON PART NO.	STANCOR PART NO.	THORDARSON PART NO.	
31	.077A	380Ω	13.5 Henries	T-20C53	C-1002*	T-20C53	*Drill new mounting holes.

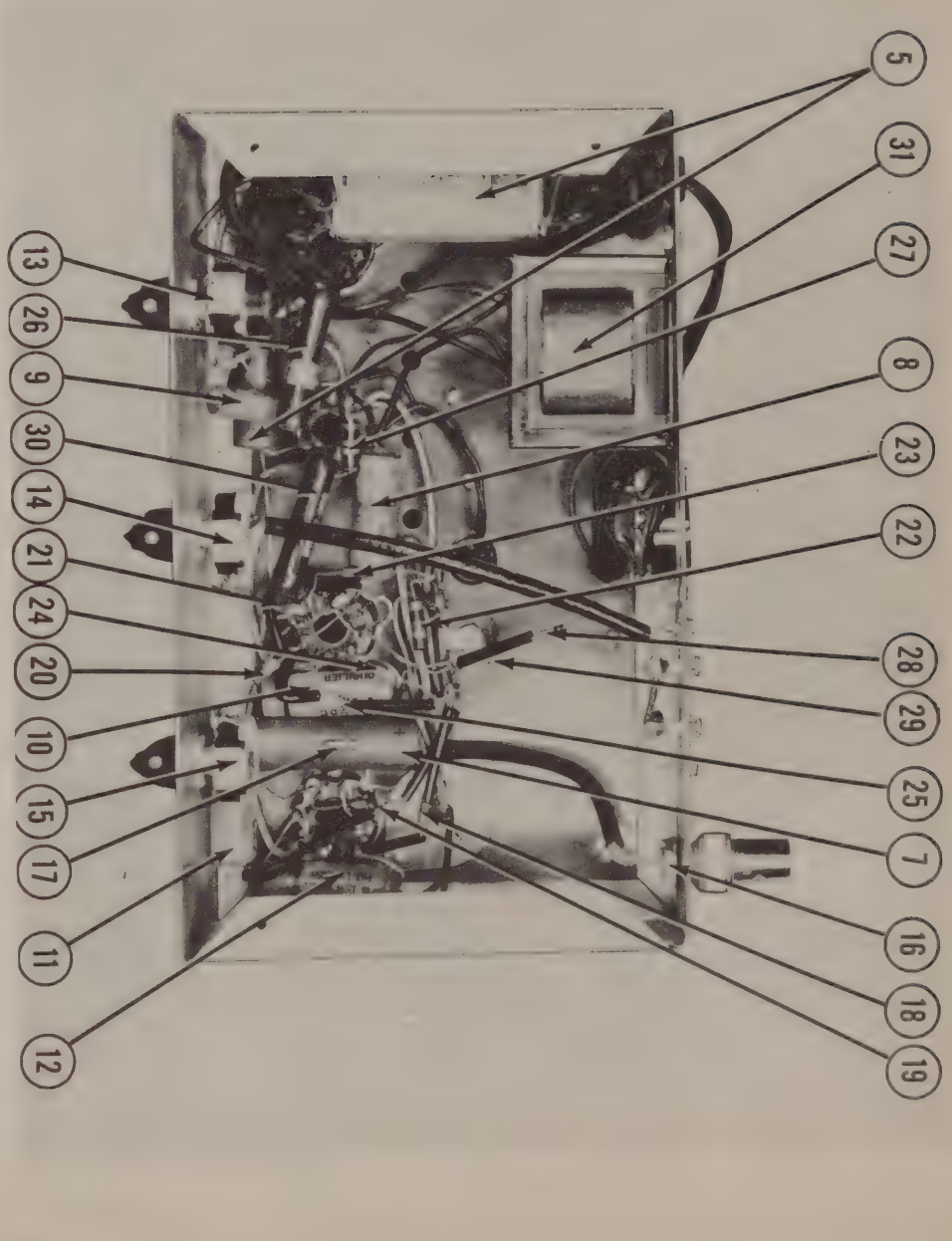
TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			INSTALLATION NOTES
	PRI.	SEC. 1	SEC. 2	SEC. 3	THORDARSON PART No.	STANCOR PART No.	THORDARSON PART No.	
32	117VAC @ .630A	740VCT @ .077A	5.2VAC @ 1.9A	6.5VAC @ 1.5A	T-22R31	P-4079†	T-22R31	†Drill new mounting holes.

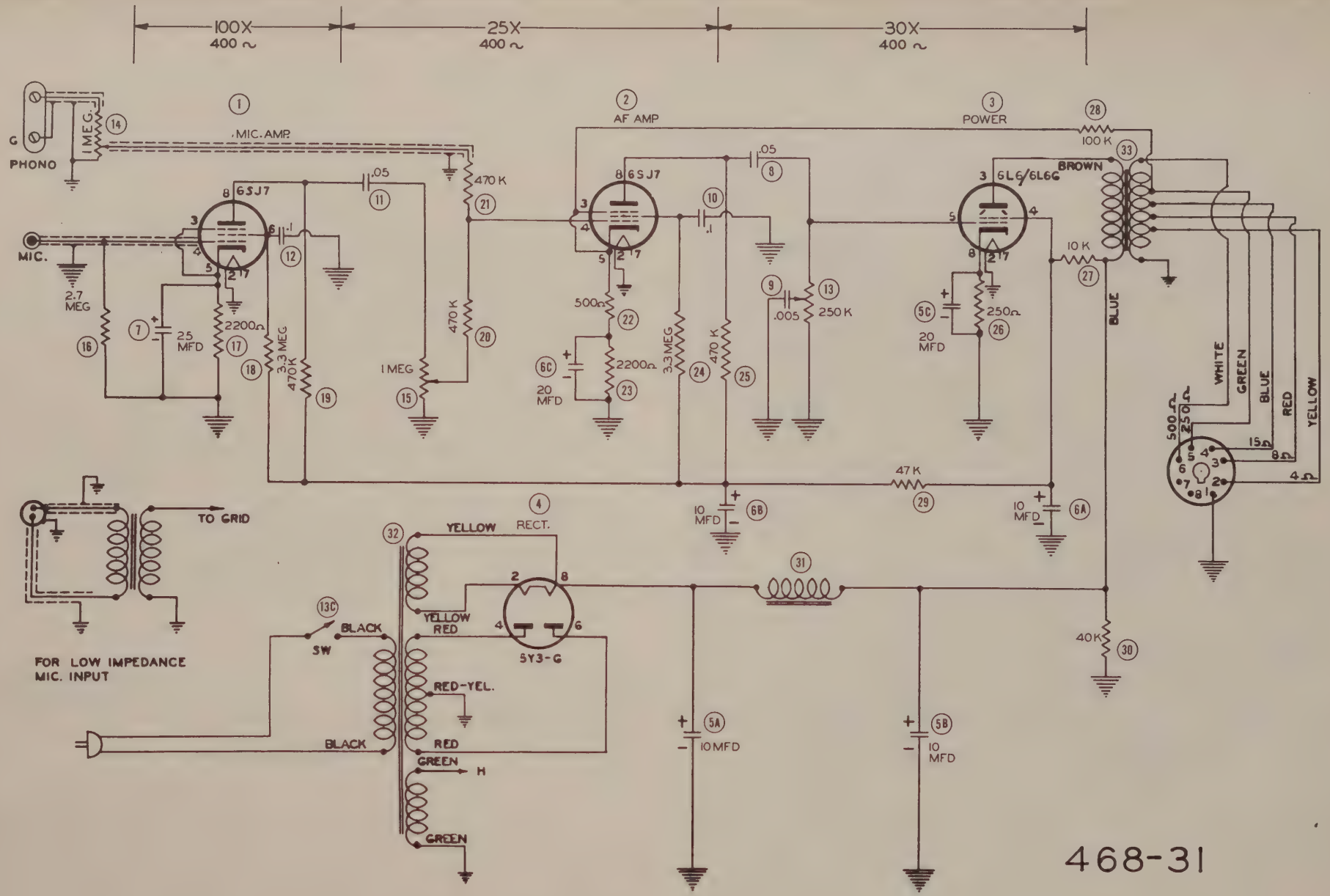
TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		THORDARSON PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
33	3900Ω	500Ω 250Ω 15Ω 8Ω 4Ω	240Ω	28Ω 18Ω .9Ω .65Ω .45Ω	T-22S70	A-3310‡	T-22S70		‡Drill new mounting holes.

CHASSIS—BOTTOM VIEW



THORDARSON
MODEL T-30M03A



468-31

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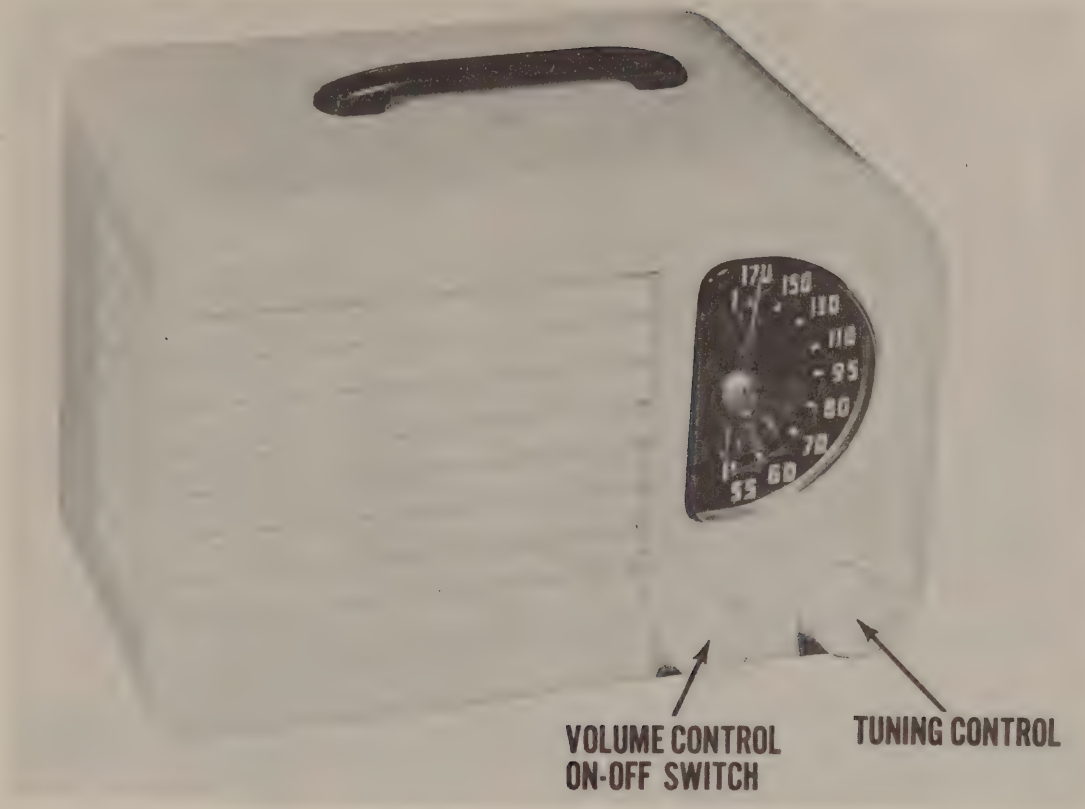
The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical.

VOGUE
MODELS 553R, 554R



VOGUE
MODELS 553R, 554R

VOGUE MODEL 2554R

TRADE NAME	Vogue Chassis Models 553R, 554R
MANUFACTURER	Sheridan Electronics Corp., 2850 S. Michigan Ave., Chicago, Ill.
TYPE SET	AC-DC Superheterodyne - Self Contained Loop Antenna
TUBES (FIVE)	Types 12SA7GT Converter, 12SK7 IF Amp., 12SQ7 Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1720KC RATING .240 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

Use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and chassis. Set volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screw-driver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to stator of rear section of variable. Low side to chassis.	456KC	High freq. end.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
200 MMF.	High side to ext. ant. clip. Low side to ext. gnd. clip.	1720KC	"	"	A5	" " " "
200 MMF.	"	1400KC	Tune for maximum output.	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		VOGUE PART No.	STANDARD REPLACEMENT		
1	Converter	12SA7GT	12SA7GT	8AD	
2	IF Amp.	12SK7	12SK7	8N	
3	Det.-AVC-AF	12SQ7	12SQ7	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	VOGUE PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
6A	40	150	15Y11	2N514	M-40+20-150	TA-240	PRSA150-40-40	BRL4215	Filter - Red
B	20	150							" - Blue
7	.05	400	16-224	TP426	S-4-05	TC-15	484-05	DT4S5	Line Filter
8	.01	400	16-218	TP421	S-4-01	TC-11	484-01	DT4S1	50L6 Plate Bypass
9	.01	400	16-218	TP421	S-4-01	TC-11	484-01	DT4S1	Audio Coupling
10	.006	400	16-212	TP409	S-6-006	TC-26	484-006	DT6D6	" "
11	.05	400	16-224	TP426	S-4-05	TC-15	484-05	DT4S5	AVC Filter
12	500	500	17-120	MC245	M0.5-35	1FM-35	1468-0005	5W5T5	Audio Plate Bypass
13	250	500	17-115	MC240	M0.5-325	1FM-325	1468-00025	5W5T25	IF Bypass Vol. Cont.
14	50	500	17-109	MC225	M0.5-45	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESIST-ANCE	WATTS	VOGUE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
15A	1 Meg.	1	26Y3	MRE3	D13-137	M-83-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 15A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

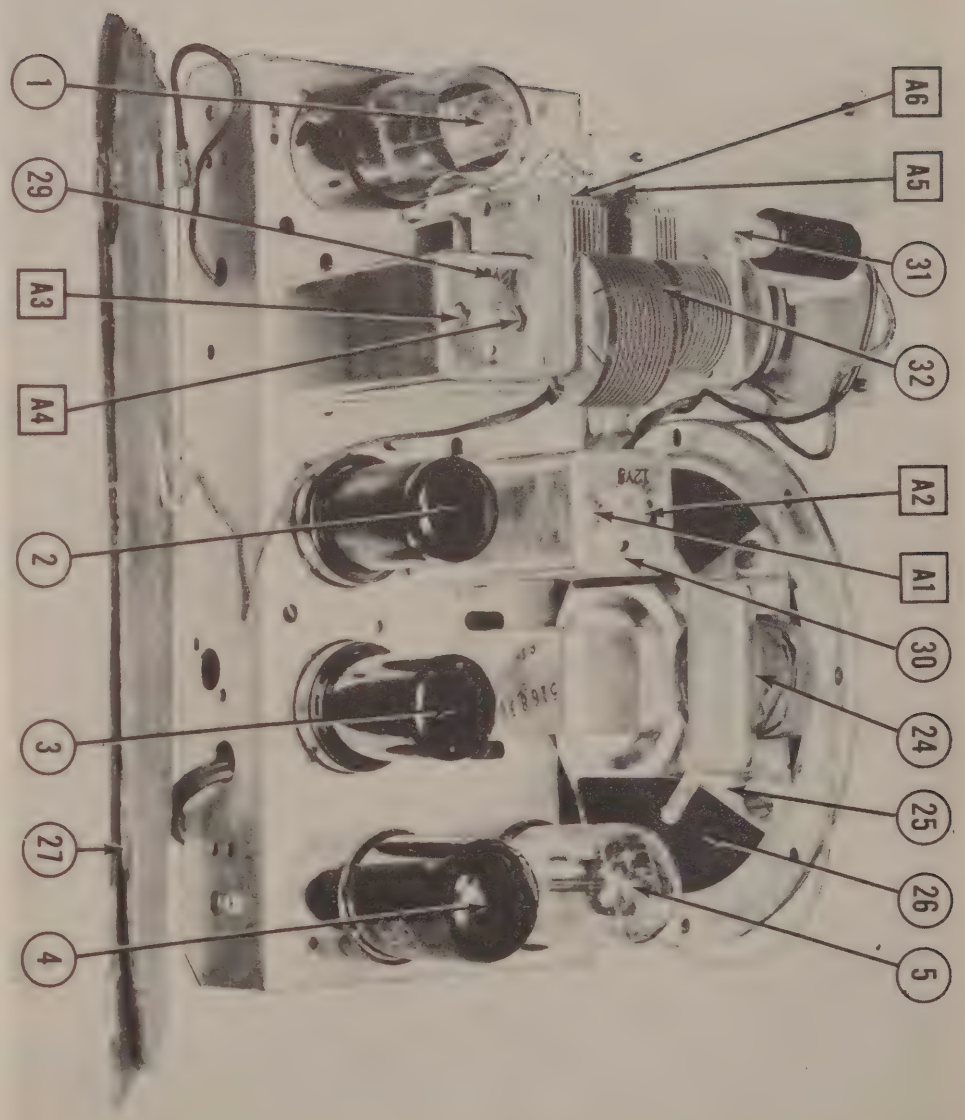
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	VOGUE PART No.	IRC PART No.	
16	20KΩ	½	25-160	BTS-22K	Red-Blk.-Or. Oscillator Grid
17	2 Meg.	½	25-193	BTS-2.2 Meg	Red-Blk.-Grn. Diode Load
18	10 Meg.	½	25-197	BTS-10 Meg	Br.-Blk.-Blue 1st AF Grid
19	220KΩ	½		BTS-220K	Red-Red-Yl. 1st AF Plate Load
20	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
21	150Ω	½	25-216	BW-½-150	Br.-Grn.-Br. Output Cathode
22	1000Ω	1	25-332	BTA-1000	Br.-Blk.-Red Filter
23	25Ω	½		BW-½-27	Red-Grn.-Blk. Surge Limiter

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		VOGUE PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
24	2200Ω	3.2Ω	170Ω	.8Ω	Part of 45B6	A-3876	T-22S45		

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA VOGUE PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-105		
25	PM	3.2Ω	45B6	Mod. P5-X		
	CONE DIA.	VC DIA.				
26	4-5/8"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

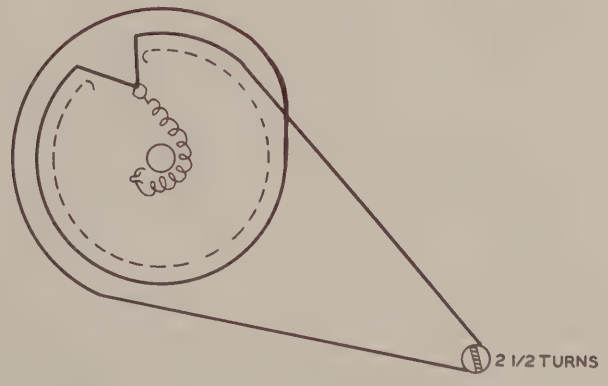
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA VOGUE PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
27	Loop Ant.	.5Ω	1.5Ω	1C2		
28	Osc. Coil		5.5Ω	20Y5	14-1040	
29	Input IF	15.5Ω	16Ω	12Y4	16-6666	
30	Output IF	16Ω	15.5Ω	12Y6	16-6667	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA VOGUE PART No.		INSTALLATION NOTES
31	Bayonet	6-8	0.15	Brown	66-1		Type 47

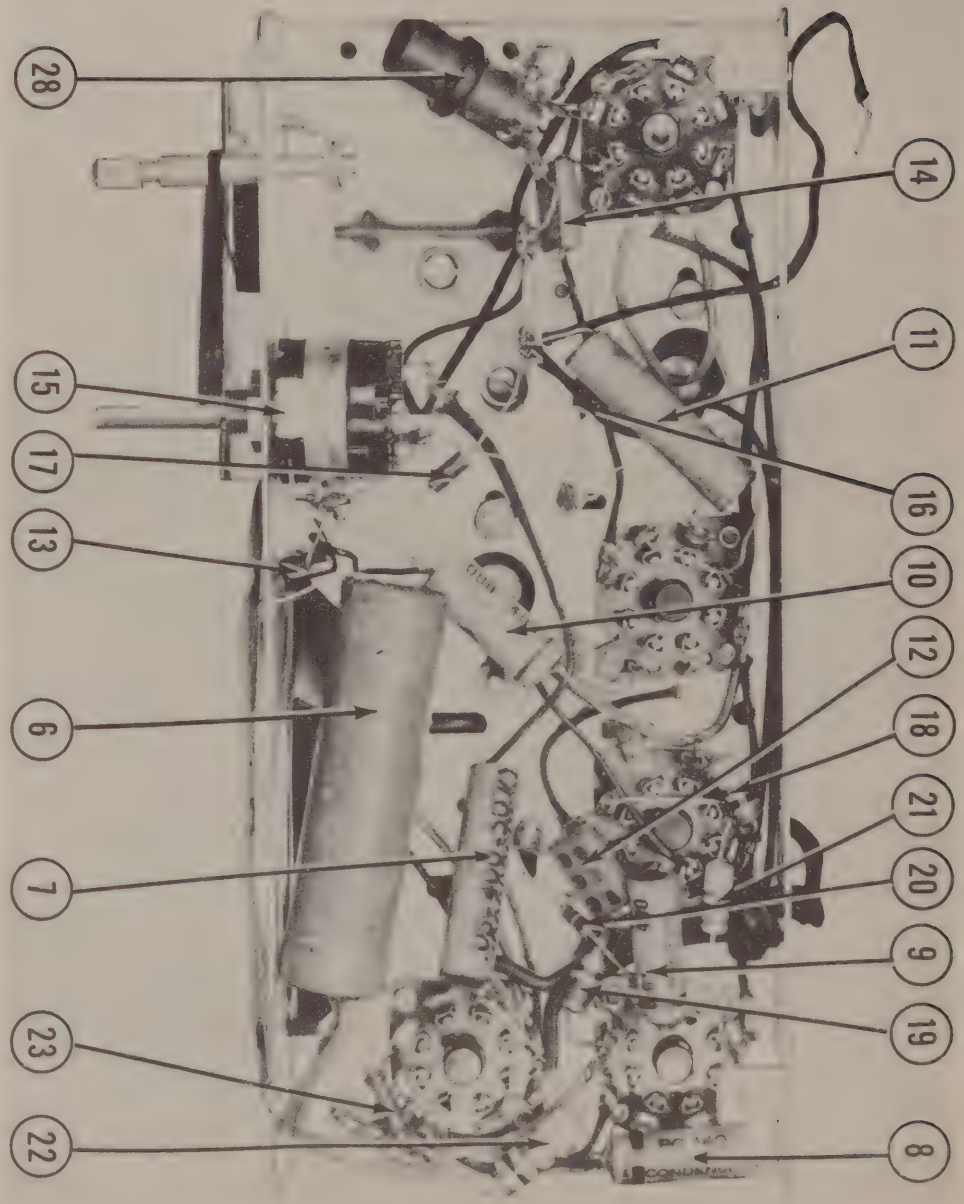
MISCELLANEOUS

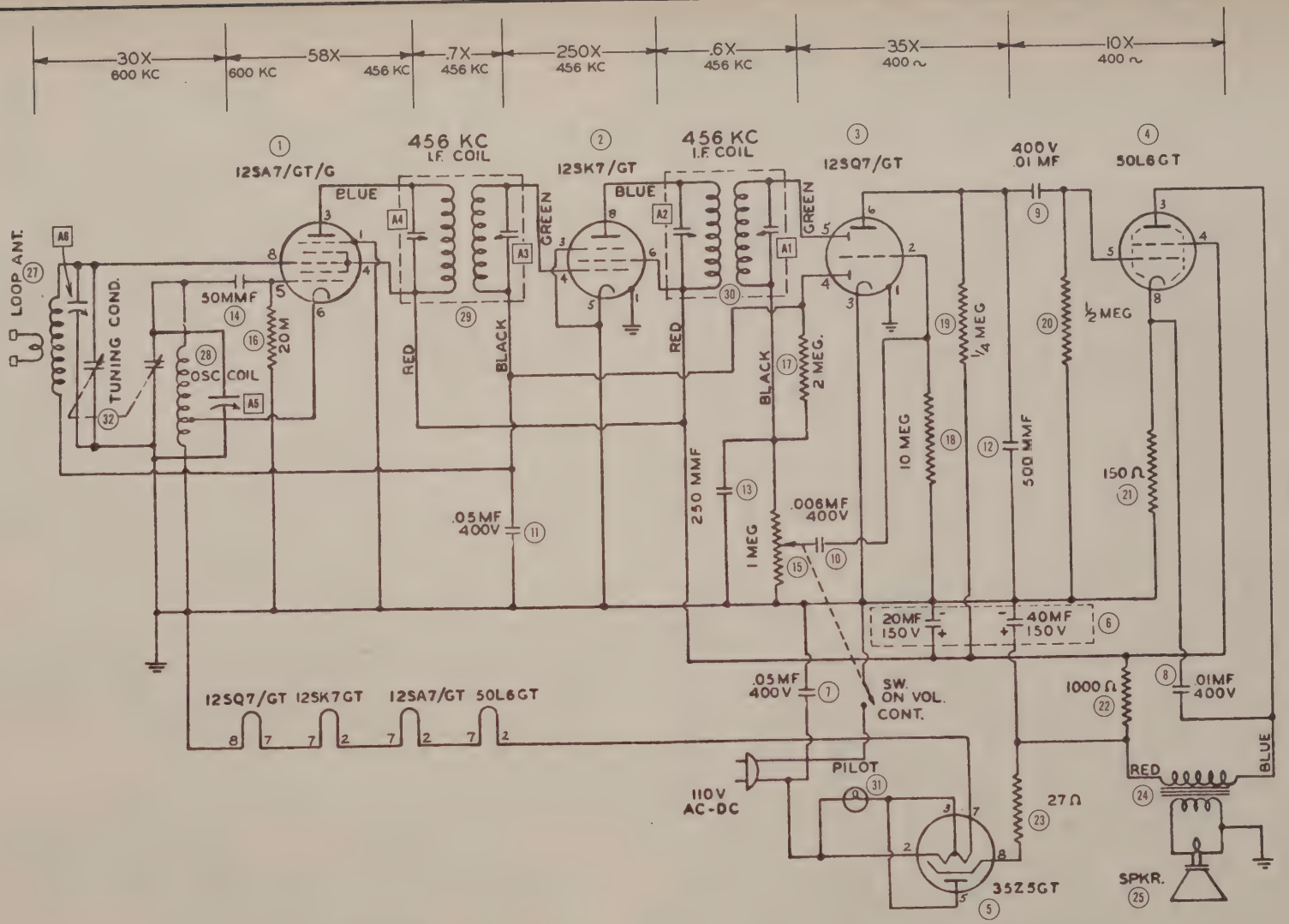
ITEM No.	PART NAME	VOGUE PART No.	NOTES
32	Tuning Cap.	18B6	2 Gang Variable Cap.



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0V.	35.5V.AC	88V.DC	88V.DC	-3.8V.DC	0V.	23.5V.AC	-.6V.DC
2	12SK7	0V.	23.5V.AC	0V.	-.6V.DC	0V.	88V.DC	12V.AC	88V.DC
3	12SQ7	0V.	-.45V.DC	0V.	-.45V.DC	-.4V.DC	57V.DC	12V.AC	0V.
4	50L6GT	0V.	87V.AC	107V.DC	88V.DC	0V.	0V.	35.5V.AC	6V.DC
5	35Z5GT	0V.	117V.AC	113V.AC	0V.	113V.AC	113V.DC	87V.AC	114V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0Ω	33Ω	55KΩ	55KΩ	21.5KΩ	.5Ω	22Ω	3MEG.
2	12SK7	0Ω	22Ω	0Ω	3 MEG.	0Ω	55KΩ	12Ω	55KΩ
3	12SQ7	0Ω	10 MEG.	0Ω	3 MEG.	975KΩ	275KΩ	12Ω	0Ω
4	50L6GT	INF.	76Ω	55KΩ	55KΩ	360KΩ	INF.	33Ω	140Ω
5	35Z5GT	INF.	100Ω	97Ω	0Ω	97Ω	55KΩ	76Ω	55KΩ

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

468-32

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

WOOLAROC
MODEL 3-11A

WOOLAROC
MODEL 3-11A

WOOLAROC MODEL 3-11A

TRADE NAME	Woolaroc Model 3-11A (Ch. 56A76)
SUPPLIER	Phillips Petroleum Co., Bartlesville, Okla.
TYPE SET	AC Operated 2 Band Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types, 6SA7 Mixer, 6SK7 1st IF Amp., 6SF7 2nd IF-Det.-AVC, 6SJ7 1st AF Amp., 6V6GT Power Output, 6X5GT Rectifier.
POWER SUPPLY	117 Volts AC — RATING .370 Amps. @ 117V AC
TUNING RANGE—BROADCAST	540-1600KC — SHORT WAVE 9-15.5MC

ALIGNMENT INSTRUCTIONS

Volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD	High side to pin #8 (grid 6SA7. Low side to chassis.)	455KC	BC B Range	Turn rotor to full open	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
100 MMFD	High side to ant. lead. Low side to chassis.	1620KC	"	"	"	A5	" " " "
"	"	1400KC	"	Tune in 1400 KC signal. Set pointer to 1400KC.	"	A6	" " " "
"	"	600KC	"	Tune in 600 KC signal.	"	A7	Rock rotor and adjust for maximum output. Repeat adjustments A5 at 1600KC and A7 at 600KC until no further improvement can be obtained by adjusting A5.
400Ω res.	"	15.6MC	SW D Range	Turn rotor to full open	"	A8	Adjust for maximum output.
"	"	14MC	"	Tune in 14 MC signal.	"	A9	Rock rotor and adjust for maximum output.
100 MMFD	"	1400KC	BC B Range	Tune in 1400 KC signal.	"	A6	Reassemble chassis in cabinet and adjust for maximum output.

HOWARD W. SAMS & CO., INC. • 2924 East Washington Street • Indianapolis 6, Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: WOOLAROC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Mixer	6SA7	6SA7	8R	
2	1st IF	6SK7	6SK7	8N	
3	2nd IF-Det.-AVC	6SF7	6SF7	7AZ	
4	1st AF	6SJ7	6SJ7	8N	
5	Power Output	6V6GT	6V6GT	7AC	
6	Rectifier	6X5GT	6X5GT	8S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	WOOLAROC PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	450	45X346	FP346	DY-2x40-450/20-25	EL-330		UP9DJ53	• Filter
B	40	450							■ "
C	20	25							▲ Cath. Bypass
8	.004	400	D66402	TP407	S-6-004	TC-24	484-.004	DT6D4	6V6 Plate Bypass
9	.01	400	D66103	TP421	S-4-01	TC-11	484-.01	DT4S1	Audio Coupling
10	.004	400	D66402	TP407	S-6-004	TC-24	484-.004	DT6D4	Tone Compensation
11	.025	400	D64253	TP451			484-.025	DT4S25	Audio Plate Decoup.
12	.1	400	D66104	TP428	S-4-1	TC-1	484-.1	DT4P1	Audio Screen Bypass
13	.005	400	D66502	TP408	S-6-005	TC-25	484-.005	DT6D5	Audio Coupling
14	.04	400	D66403	TP425	S-6-04	TC-14	484-.04	DT4S4	Tone Compensation
15	.04	400	D66403	TP425	S-6-04	TC-14	484-.04	DT4S4	Screen Bypass
16	.05	200	B66503	TP426	S-4-05	TC-15	484-.05	DT4S5	AVC Filter
17	.04	400	D66403	TP425	S-6-04	TC-14	484-.04	DT4S4	6SA7 Screen Bypass
18	.0005	200	B66501	TP403	S-6-0005	TC-35	1468-.0005	DT6T5	RF Coupling
19	470	500	47X505	MC245	MO.5-35	1FM-35	1468-.0005	5W5T5	Audio Plate Bypass
20	47	500	47X463	MC225	MO.5-45	1FM-45	1468-.00005	5W5Q5	Tone Compensation
21	68	500	47X471			MS-47	1469-.00007	5W5Q7	IF Filter Diode
22	100	500	47X476	MC235	MO.5-31	1FM-31	1468-.0001	5W5T1	" " "
23	47	500	47X463	MC225	MO.5-45	1FM-45	1468-.00005	5W5Q5	IF Coupling
24	68	500	47X466			MS-47	1469-.00007	5W5Q7	Osc. Grid Capacitor
25	286	500	47X481						Fixed Padder
26	40	500	47X472	MCB223	MOS.5-44	MS-44	1469-.00004	5R5Q4	Fixed Trimmer
27	360	500	47X474						Fixed Padder
28	47	500	47X473	MCB225	MOS.5-45	MS-45	1469-.00005	5R5Q5	Fixed Trimmer
29	270	500	47X445	MC241	MO.5-33	MS-33	1468-.0003	5W5T3	Loop Pri. Shunt

CONTROLS

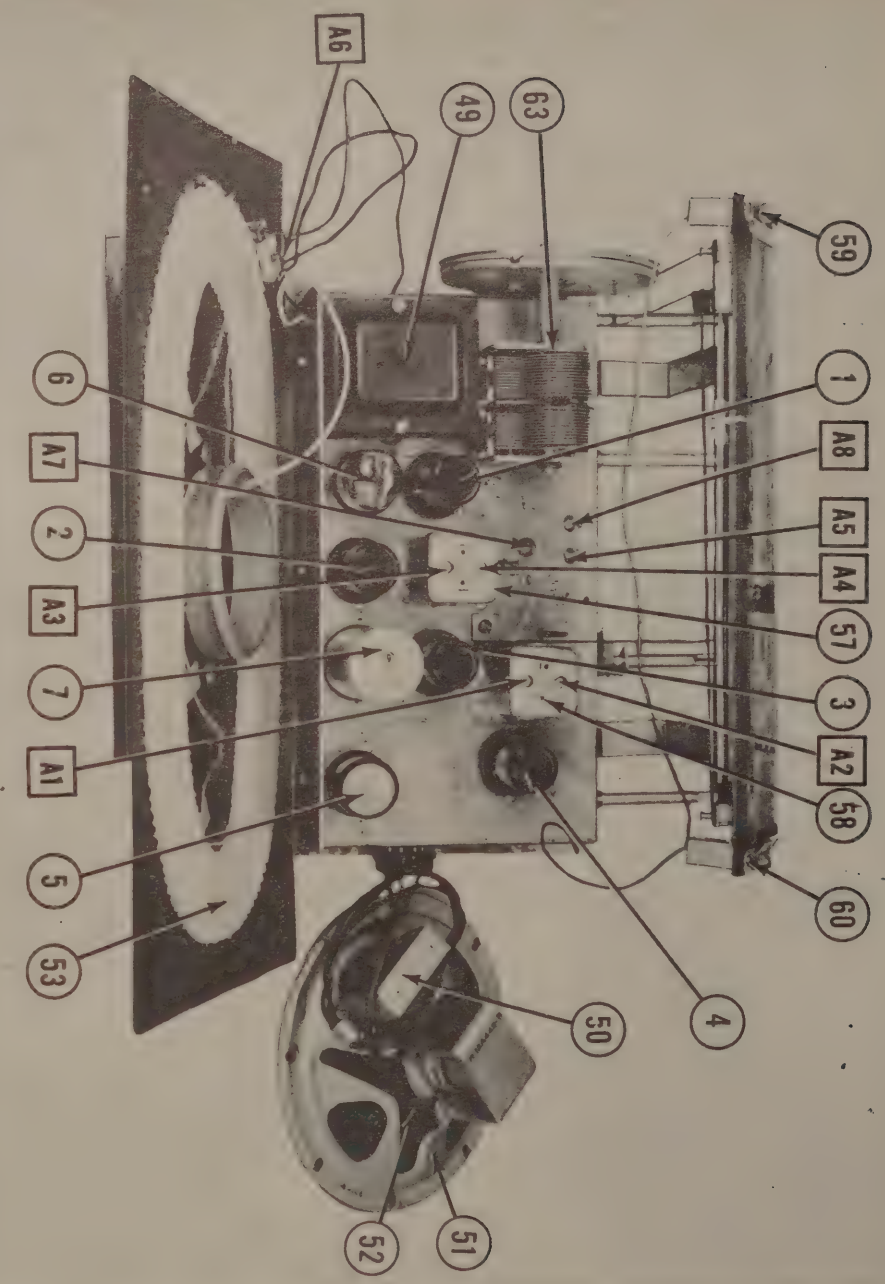
ITEM No.	RATING: RESISTANCE	RATING: WATTS	WOOLAROC PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
30A	500KΩ	1	36X354	TM227	D13-133X	AT-92*	Volume Control
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 30A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
31A	3 Meg.	1	40X280	UM165	D13-140	AM-67-Z	Tone Control-See Note 1
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 31A per instructions
31A	3 Meg.	1	40X275				Tone Control
B	Shaft		Not Req.				

*Use 100KΩ tap, cut other tap off.
Note 1-Attach original arm to tone control shaft to actuate radio-phono switch.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	WOOLAROC PART No.	IRC PART No.	IDENTIFICATION CODES
32	2.2 Meg.	½	B85225	BTS-2.2 Meg.	Red-Red-Grn. Converter Grid
33	39KΩ	1	C84393	BTA-39K	Or.-White-Or. Mixer Screen Dropping
34	39KΩ	½	B84393	BTS-39K	Or.-White-Or. Osc. Grid
35	39KΩ	1	C84393	BTA-39K	Or.-White-Or. IF Screen Dropping
36	2200Ω	½	B84222	BTS-2200	Red-Red-Red IF Plate Load
37	1 Meg.	½	B84105	BTS-1 Meg.	Br.-Blk.-Grn. IF Grid
38	2.2 Meg.	½	B85225	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
39	47KΩ	½	B85473	BTS-47K	Yl.-Vi.-Or. IF Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (CONTINUED)

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	WOOLAROC PART No.	IRC PART No.	
40	15KΩ	½	B84153	BTS-15K	Br.-Grn.-Or. Tone Compensation
41	10 Meg.	½	B85106	BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
42	470KΩ	½	B85474	BTS-470K	Yl.-Vi.-Yl. 1st AF Screen Dropping
43	33KΩ	½	B84333	BTS-33K	Or.-Or.-Or. 1st AF Plate Load
44	82KΩ	½	B84823	BTS-82K	Gray-Red-Or. 1st AF Plate Filter
45	470KΩ	½	B85474	BTS-470K	Yl.-Vi.-Yl. Output Grid
46	270Ω	1	C84271	BW-1-270	Red-Vi.-Br. Output Cathode
47	2Ω	½	43X213	BW-½-2.2	Series Pilot Lights
48	1800Ω	2	D84182	BT-2-1800	Br.-Gray-Red Filter

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	WOOLAROC PART No.	STANCOR PART No.	THORDARSON PART No.	INSTALLATION NOTES
49	117V AC @ .370A	485V CT @ .060A	6.35V AC @ 2.5A		58X252			

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		WOOLAROC PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
50	6600Ω	3.7Ω	530Ω	1.25Ω	Part of 12A442	A-3823	T-13S371		†Drill one new mounting hole

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			WOOLAROC PART No.	JENSEN PART No.		
51	FIELD	VC IMP.	12A442	ST-110		
	PM	3.7Ω				
52	CONE DIA.	VC DIA.	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			
	6"	7/8"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	WOOLAROC PART No.	MEISSNER PART No.	
53	"B"Loop Ant.	30.5Ω	1.5Ω	26A417		
54	"D"Ant.Coil	1Ω	0Ω	9A1812		
55	"B"Osc. "	1Ω	2Ω	9A1613		Items 55, 56 wound on same form
56	"D" " "		0Ω	9A1813		
57	Input IF	22Ω	20.5Ω	9A1814	16-6658	
58	Output IF	19.8Ω	18.2Ω	9A1815	16-6660	

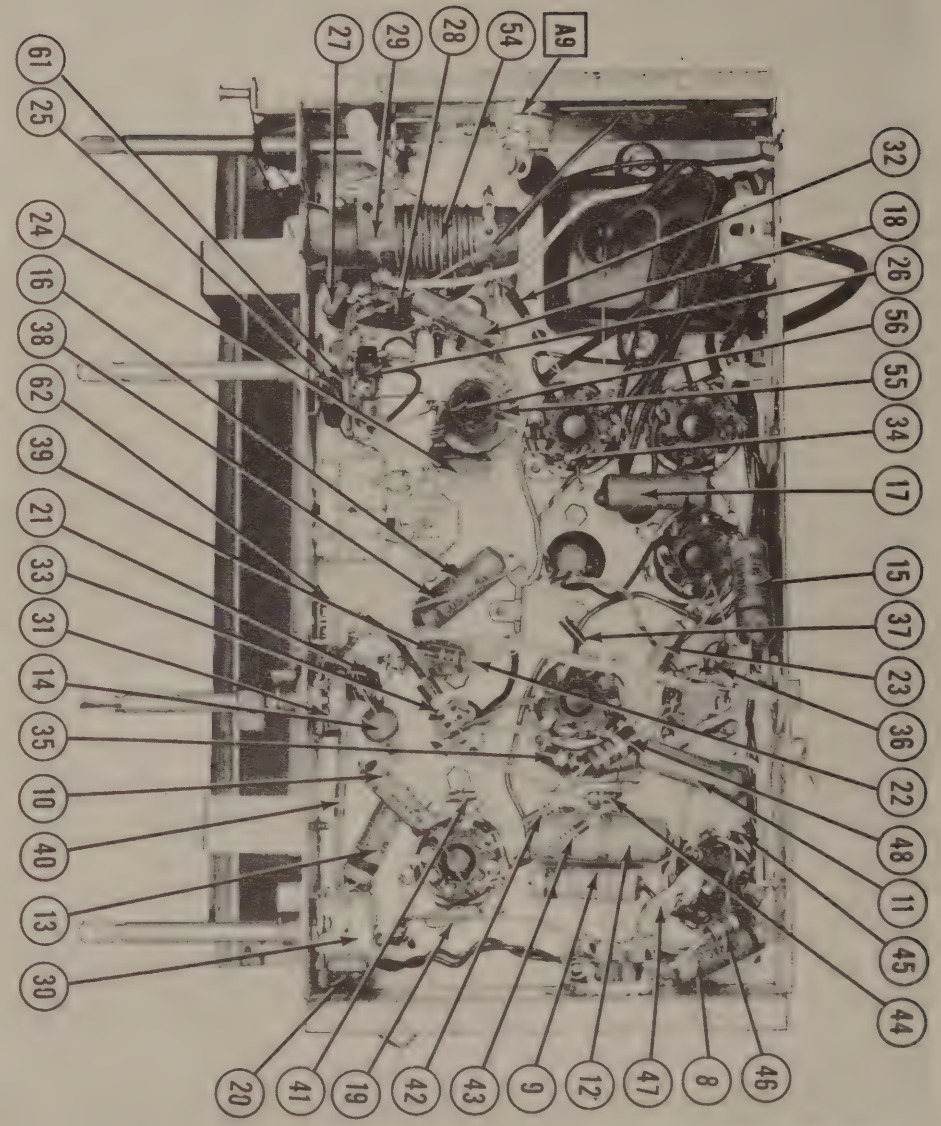
DIAL LIGHT

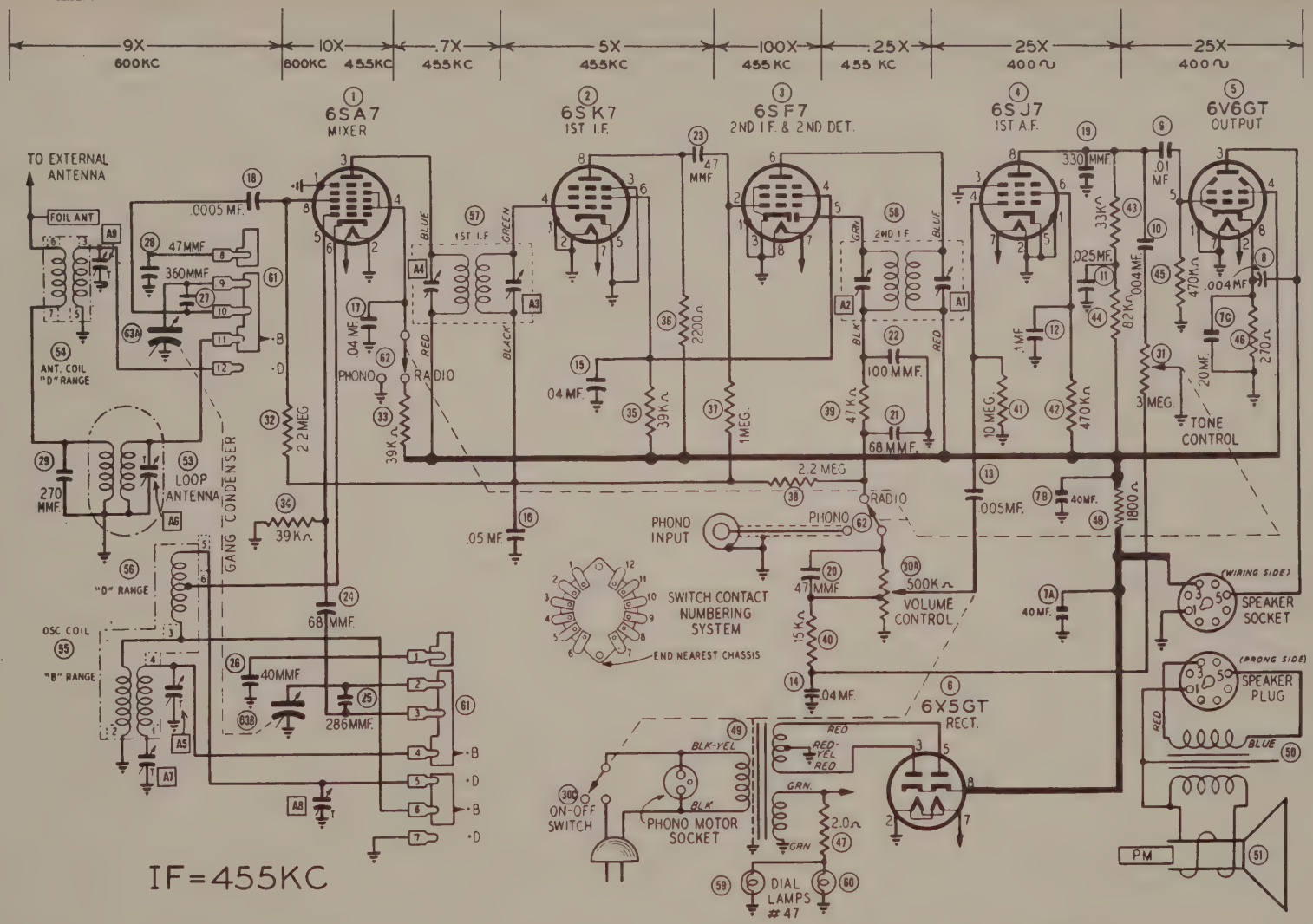
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					WOOLAROC PART No.		
59	Bayonet	6-8	0.15	Brown			Type 47
60	"	6-8	0.15	"			" "

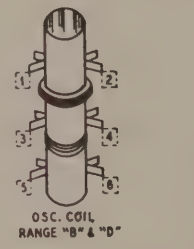
MISCELLANEOUS

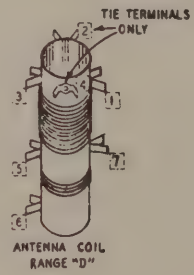
ITEM No.	PART NAME	WOOLAROC PART No.	NOTES
61	Band Switch	2A345	
62	Switch	2A161	Radio-Phono-When 40X280 Is Used
63	Tuning Cap.	14A184	2 Gang Variable Cap with Drive Pulley
A5	Trimmer Cap.	17A109	BC Osc. Adj. 2.5-35MMF
A8	Trimmer Cap.		SW Osc. Adj. 2.5-35MMF
A6	Trimmer Cap.	17A123	BC Ant. Adj. 1.0-12 MMF
A7	Padder Cap.	17A155	BC Osc. Pad 350-430 MMF
A9	Trimmer Cap.	17A164	SW Ant. Adj. 5-50 MMF
	Knob	10A578	Tuning
	"	10A579	Volume
	"	10A580	Tone-Radio-Phono
	"	10A581	SW-BC

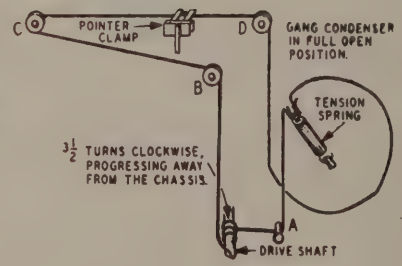
CHASSIS—BOTTOM VIEW










POINTER CLAMP
GANG CONDENSER IN FULL OPEN POSITION.
TENSION SPRING
3½ TURNS CLOCKWISE, PROGRESSING AWAY FROM THE CHASSIS.
DRIVE SHAFT

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SA7	0V.	0V.	207V.DC	60V DC	-.5V. DC	0V.	6.3V.AC	0V.
2	6SK7	0V.	0V.	0V.	-.2V. DC	0V.	60V.DC	6.3V.AC	190V.DC
3	6SF7	0V.	-.5V. DC	0V.	60V.DC	-.45VDC	207V.DC	6.3V.AC	0V.
4	6SJ7	0V.	0V.	0V.	-.35V.DC	0V.	37V.DC	6.3V.AC	35V.DC
5	6V6GT	0V.	6.3V.AC	237V.DC	207V.DC	0V.	0V.	0V.	9.6V.DC
6	6X5GT	0V.	0V.	240V.AC	0V.	240V.AC	0V.	6.3V.AC	245V.DC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

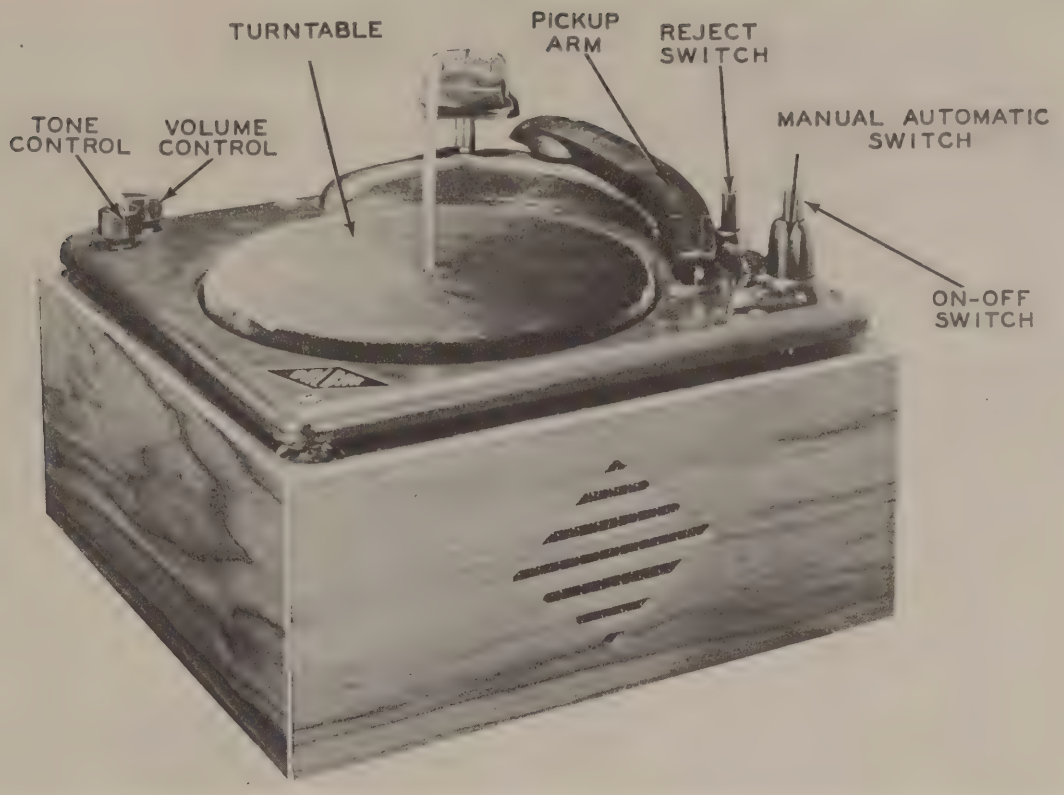
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SA7	0Ω	0Ω	137KΩ	176KΩ	39KΩ	1Ω	.25Ω	4.9MEG
2	6SK7	0Ω	0Ω	0Ω	3MEG	0Ω	176KΩ	.25Ω	357KΩ
3	6SF7	0Ω	4 MEG	0Ω	176KΩ	480KΩ	137KΩ	.25Ω	0Ω
4	6SJ7	0Ω	0Ω	0Ω	12MEG	0Ω	607KΩ	.25Ω	252KΩ
5	6V6GT	0Ω	.25Ω	135KΩ	137KΩ	500KΩ	INF	0Ω	255Ω
6	6X5GT	INF	0Ω	185Ω	INF	195Ω	INF	.25Ω	135KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

468-33

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



DALBAR MODEL M8 "TONOMATIC"

TRADE NAME	Dalbar Model M8 "Tonomatic"
MANUFACTURER	Dalbar Mfg. Co., 1314 Forest Ave., Dallas 15, Texas
TYPE SET	AC Operated Automatic Record Changer with 3 Tube Amp. & Speaker
TUBES (THREE)	Tubes, 6SH7 AF Amp., 6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	110-125 Volts AC
TUNING RANGE—BROADCAST	.300 Amps. @ 117V AC

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SH7	0V.	0V.	0V.	-.4V. DC	0V.	48V.DC	6.6V.AC	163V.DC
2	6V6GT	0V.	0V.	228V.DC	240V.DC	0V.	0V.	6.6V.AC	15V.DC
3	5Y3GT	0V.	258 V.DC	240V.DC	240V.AC	117V.AC	240V.AC	15V.DC	258V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SH7	0Ω	0Ω	0Ω	270KΩ	0Ω	290KΩ	.12Ω	66KΩ
2	6V6GT	0Ω	0Ω	36KΩ	36KΩ	245KΩ	INF	.12Ω	400Ω
3	5Y3GT	0Ω	36KΩ	36KΩ	265Ω	7.5Ω	275Ω	400Ω	36KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

HOWARD W. SAMS & CO., INC. • 2924 East Washington Street • Indianapolis 6, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1946 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. A. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc."

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		DALBAR PART No.	STANDARD REPLACEMENT		
1	AF Amp.	6SH7	6SH7	6BK	
2	Power Output	6V6GT	6V6GT	7AC	
3	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	DALBAR PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
4A	16	450	37A4-161	2S569	DHS-2x16-450	TU-1616	PRV450-16-16	ES5116	Filter - Red
B	16	450							" - "
5	.1	600	35A6-104	TP418	S-6-1	TC-1	684-.1	DT6P1	Tone Compensation
6	.01	600	35A6-103	TP410	S-6-01	TC-11	684-01	DT6S1	6V6 Plate Bypass
7	.01	600	35A6-103	TP410	S-6-01	TC-11	684-01	DT6S1	Audio Coupling
8	.05	600	35A6-503	TP415	S-6-05	TC-15	684-05	DT6S5	Audio Screen Bypass
9	.05	600	35A6-503	TP415	S-6-05	TC-15	684-05	DT6S5	Audio Coupling
10	.01	600	35A6-103	TP410	S-6-01	TC-11	684-01	DT6S1	Tone Compensation

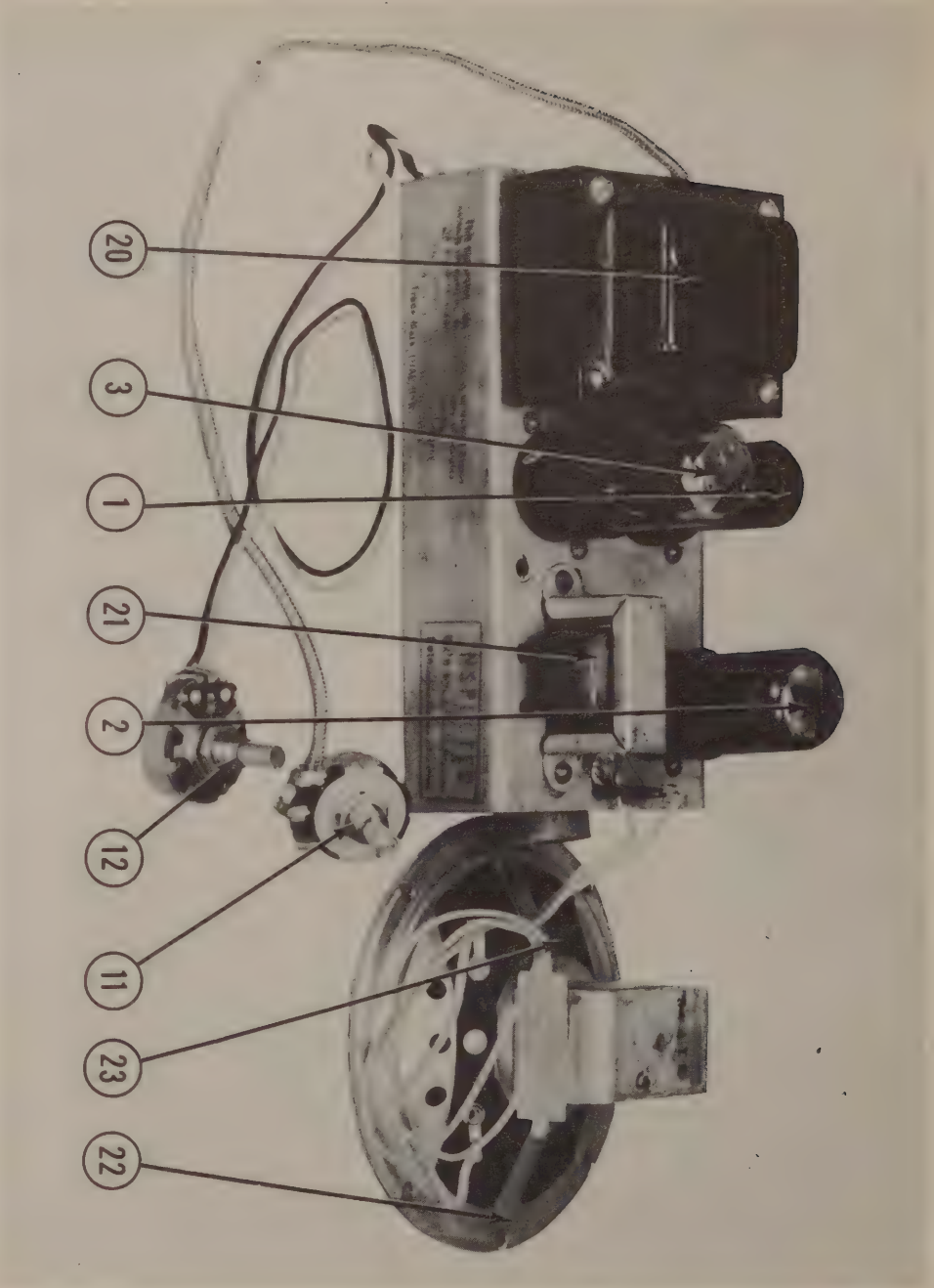
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	DALBAR PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
11A	1 Meg.	1	A-61503-2	UM159	D11-137	M-61-S	Volume Control
B	Shaft		Not Req.	SS-1	A	Not Req.	Attach to 11A per instructions
12A	100KΩ	1	27E1-104	MR39	D13-125	M-61-C	Tone Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 12A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	DALBAR PART No.	IRC PART No.	
13	30KΩ	½	25C2-303	BTS-33K	Or.-Blk.-Or. Series Phono
14	250KΩ	½	25C2-254	BTS-270K	Red-Grn.-Yl. 1st AF Grid
15	200KΩ	½	25C2-134	BTS-220K	Red-Blk.-Yl. 1st AF Screen Dropping
16	30KΩ	½	25C2-303	BTS-33K	Or.-Blk.-Or. 1st AF Plate Load
17	250KΩ	½	25C2-254	BTS-270K	Red-Grn.-Yl. Output Grid
18	400Ω	½	25C2-401	BTS-390	Yl.-Blk.-Br. Output Cathode
19	450Ω	10	26C5-451	AB-500	Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			INSTALLATION NOTES
	PRI.	SEC. 1	SEC. 2	SEC. 3	DALBAR PART No.	STANCOR PART No.	THORDASON PART No.	
20	117VAC @ .3A	500VCT @ .036A	5.1VAC @ 1.5A	6.6VAC @ .75A		P-6297	T-15R19	

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		DALBAR PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
21	4800Ω	3.4Ω	390Ω	.64Ω	51B2	A-3877†	T-22347†		†Drill one new mounting hole.

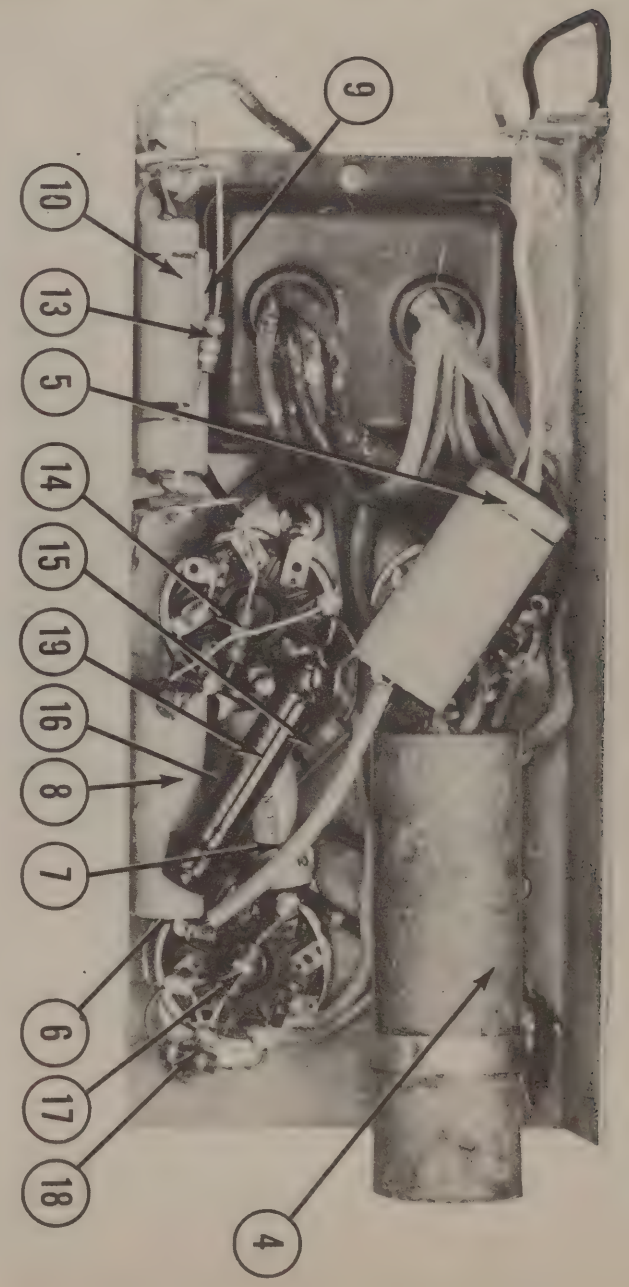
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			DALBAR PART No.	JENSEN PART No.		
22	FIELD	VC IMP.	6041-5	ST-107 Mod. P5-V		
	FM	3.4Ω				
23	CONE DIA.	VC DIA.	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			
	4-9/16"	1/2"				

DISASSEMBLY INSTRUCTIONS

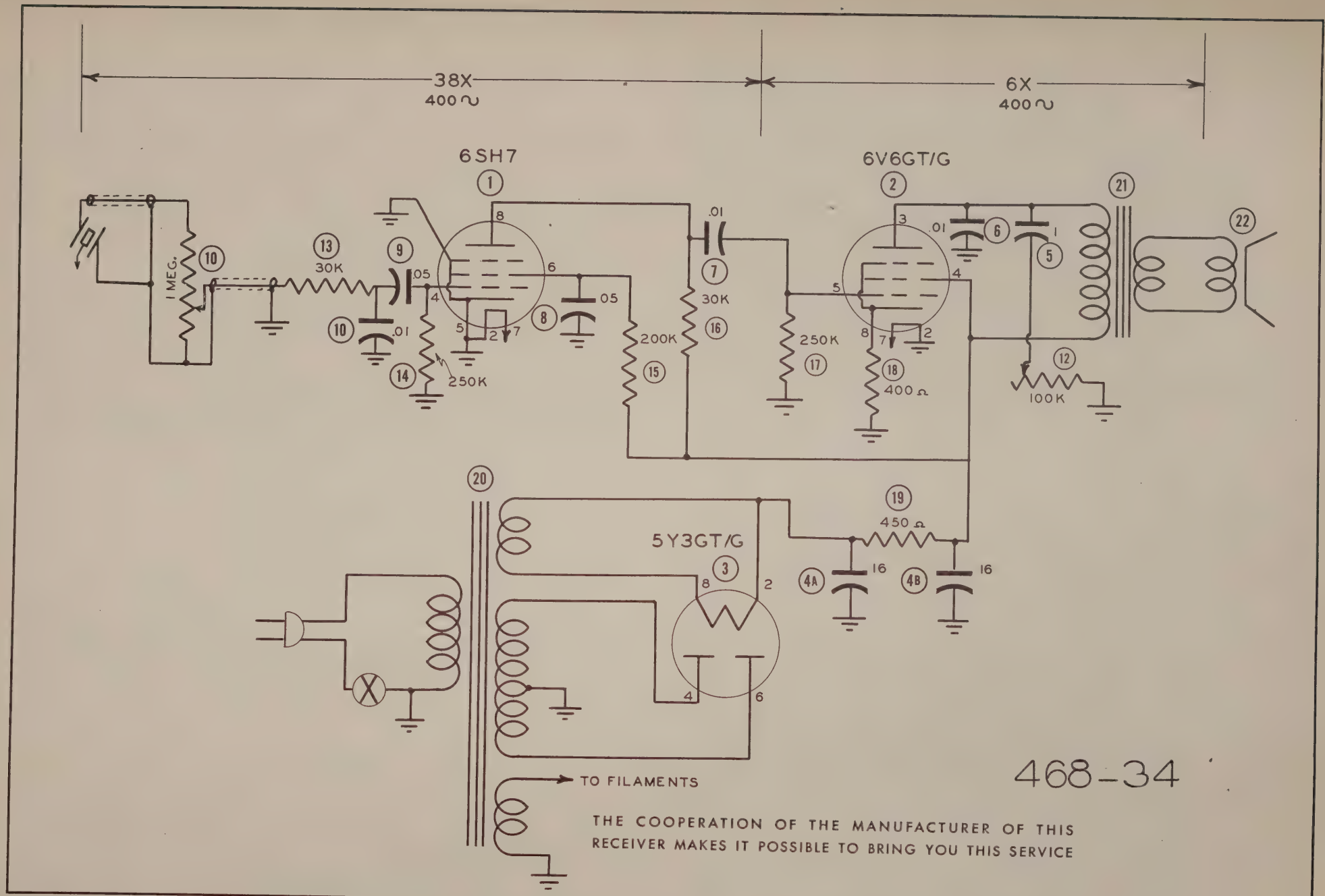
1. Remove the volume and tone control screw type knobs and felt washers. Remove the two lock nuts. Push control shafts down through holes in cabinet.
2. Remove the three Phillips head type screws from the turntable. Remove the three cushioned springs. Lift turntable out of cabinet.
3. Remove the bolt and nut holding chassis to the cabinet.
4. Remove the two screws holding the speaker to the cabinet.
5. Unsolder one side of the line cord from the terminal strip on chassis.
6. Unsolder the other side of the line cord from the spliced connection of the on-off switch.
7. Unsolder red and orange leads from terminal strip.
8. Unsolder black leads from the volume control.

CHASSIS—BOTTOM VIEW



DALBAR MODEL M3

DALBAR MODEL M3



The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accur[illegible]f alignment, etc., that an absolute reading is impractical. AVC is ma[illegible]operative and 3-volt battery bias substituted for measurement.

UTAH MODEL 550
AUTOMATIC RECORD CHANGER

This changer is designed to play and automatically change twelve 10″ or ten 12″ records, not intermixed. The last record will be repeated until the changer is turned off. The changer is designed to have a minimum of moving parts, all readily accessible for adjustment and service.

CHANGER USE

At present, this changer has been used in postwar models by the following manufacturers:

AUDIO INDUSTRIES
1001 Green Street, Michigan City, Indiana

BELMONT RADIO CORPORATION
5921 West Dickens Avenue, Chicago, Illinois

BENDIX RADIO DIV. OF BENDIX AVIATION CORP.
Baltimore, Maryland

COLONIAL RADIO CORPORATION
254 Rano Street, Buffalo, New York

ELECTROMATIC MANUFACTURING COMPANY
88 University Place, New York, New York

ELECTRONIC CORPORATION OF AMERICA
45 West 18th Street, New York, New York

ELECTRO-TONE
221 Hudson Street, Hoboken, New Jersey

GLOBE ELECTRONICS COMPANY
225 West 17th Street, New York City

INTERNATIONAL DETROLA CORPORATION
Beard Avenue at Chatfield, Detroit, Michigan

OHIO ELECTRONICS, INC.
1156 Dorr Street, Toledo, Ohio

PACKARD-BELL COMPANY
3443 Wilshire Boulevard, Los Angeles, California

SONATA PRODUCTS COMPANY
624 South Michigan, Chicago, Illinois

STEELMAN RADIO COMPANY
742 East Tremont Street, Bronx, New York

STROMBERG-CARLSON COMPANY
100 Carlson Road, Rochester, New York

SYMPHONIC RADIO AND ELECTRONIC CORP.
292-298 Main Street, Cambridge, Massachusetts

TELEQUIP RADIO COMPANY
1901 South Washtenaw, Chicago, Illinois

TEMPLETONE RADIO MANUFACTURING CORP.
Garfield Avenue, New London, Connecticut

WARWICK MANUFACTURING CORPORATION
4640 West Harrison Street, Chicago, Illinois

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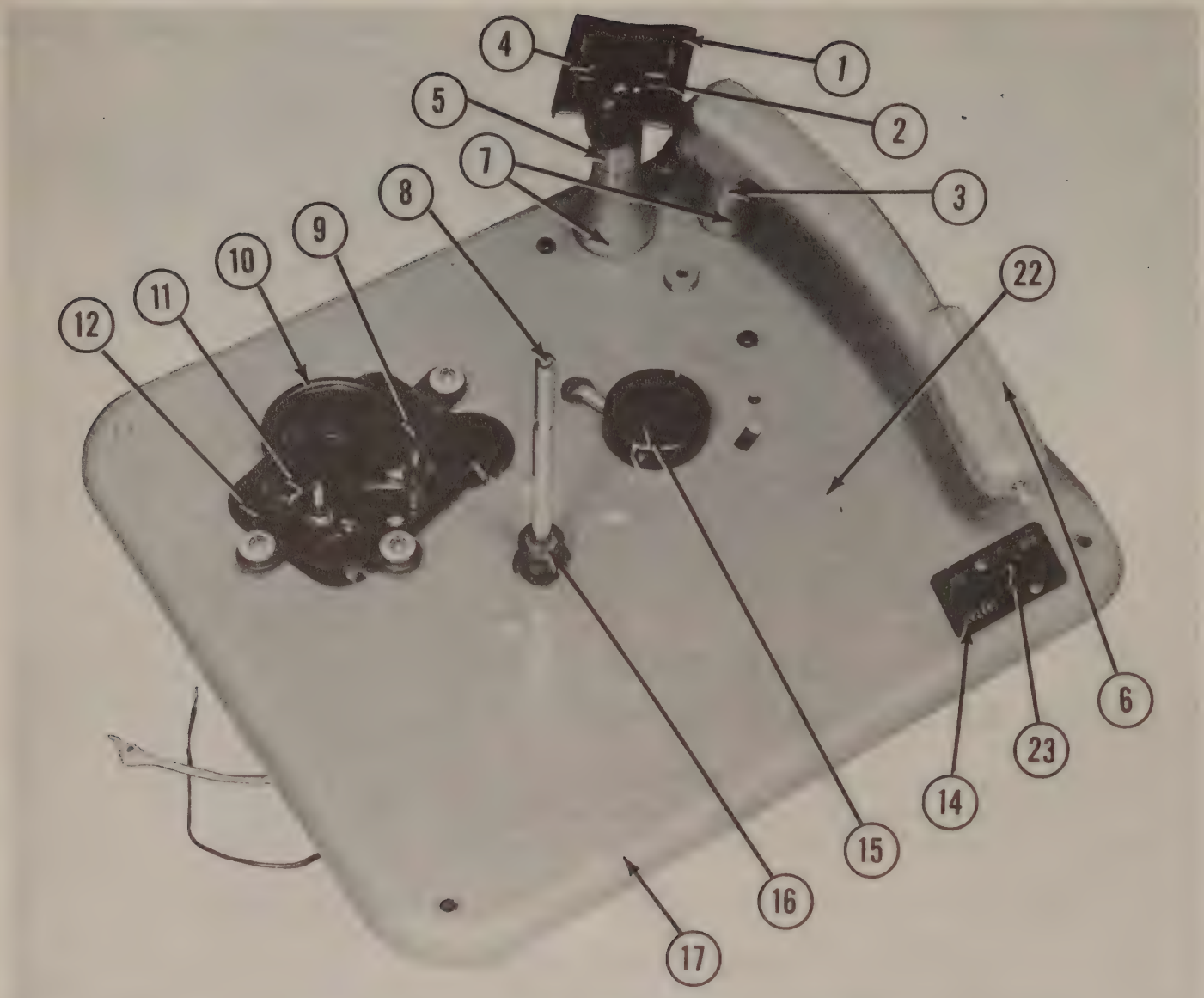
UTAH MODEL 550
AUTOMATIC RECORD CHANGER

UTAH MODEL 550
AUTOMATIC RECORD CHANGER



OPERATING INSTRUCTIONS

For automatic operation, detent "A" on the tone arm hub must be engaged. Position the record support shelf for the desired size records. Place a load of records on the spindle and record support shelf and flip the toggle plate on to the stack of records. Push the control lever to the "on" position and then release. At the conclusion of the last record, allow the tone arm to return to the record, then turn changer off and place tone arm on the rest.

To play manually, engage the "H" detent. Turn the control to "on," and allow the tone arm to raise and lower. It may then be placed by hand on the edge of the record. Each time a record is played the tone arm must be allowed to raise and lower before it is placed by hand on the next record.

THE CHANGE CYCLE

The mechanical functions of the change cycle raising and lowering the tone arm and the ejecting of records are controlled by cam (29). This cam is driven, during the change cycle only, by a drive dog (30) on the cam engaging one of the bosses on the constantly revolving drum (27). This drum wheel (27) is driven from the turntable bearing (18) by means of a belt (20).

PARTS LIST

No.	Mfg. Part No.	Description
1	A-50162	Plate, Ejector
2	A-50110 A-50015 A-50025	Toggle Plate and Bumper Assembly Plate, Toggle Bumper
3	B-50600	Hub Assembly, Tone Arm
4	A-50066	Nut, Acorn
5	A-50176	Ejector Shelf Casting
6	D-50808	Tone Arm
7	B-50190	Plate Assembly, Ejector and Tone Arm
8	B-50127	Spindle Assembly
9	.....	Lever Assembly motor-drive wheel
10	.....	Idler Wheel
11	.....	Tension spring, Idler Wheel
12	C-50154 A-50186 A-50038 A-50188	Motor (For 60-cycle, 105-125V.) Grommet Spacer Screw No. 6-32 x ⅜ thread cutting, hex washer head
13	A-50040	Spring, Toggle Plate
14	A-50153	Escutcheon
15	A-50097	Cover, Switch
16	A-50010	Turntable Bearing Assembly
17	C-50100	Motor Board Assembly
18	A-50198	Pulley Bearing
19	C-50030	Spindle Bearing Assembly
20	B-50137	Belt, Drive
21	A-50102	Switch
22	A-50301	Rivet, Shoulder (on-off lever)
23	B-50140	Lever, On-Off
24	A-50076 A-50406	Spring-Release Bracket Spring-Trip Dog
25	B-50400	Release Bracket Assembly
26	B-50300 C-50180	Tone Arm Trip Assembly Cap and Drum Assembly
27	B-50700	Drum Drive Wheel
28	A-50059	Stud
28A	A-50058	Friction Pad
29	B-50060	Cam Assembly
30	.....	Dog, Cam Assembly

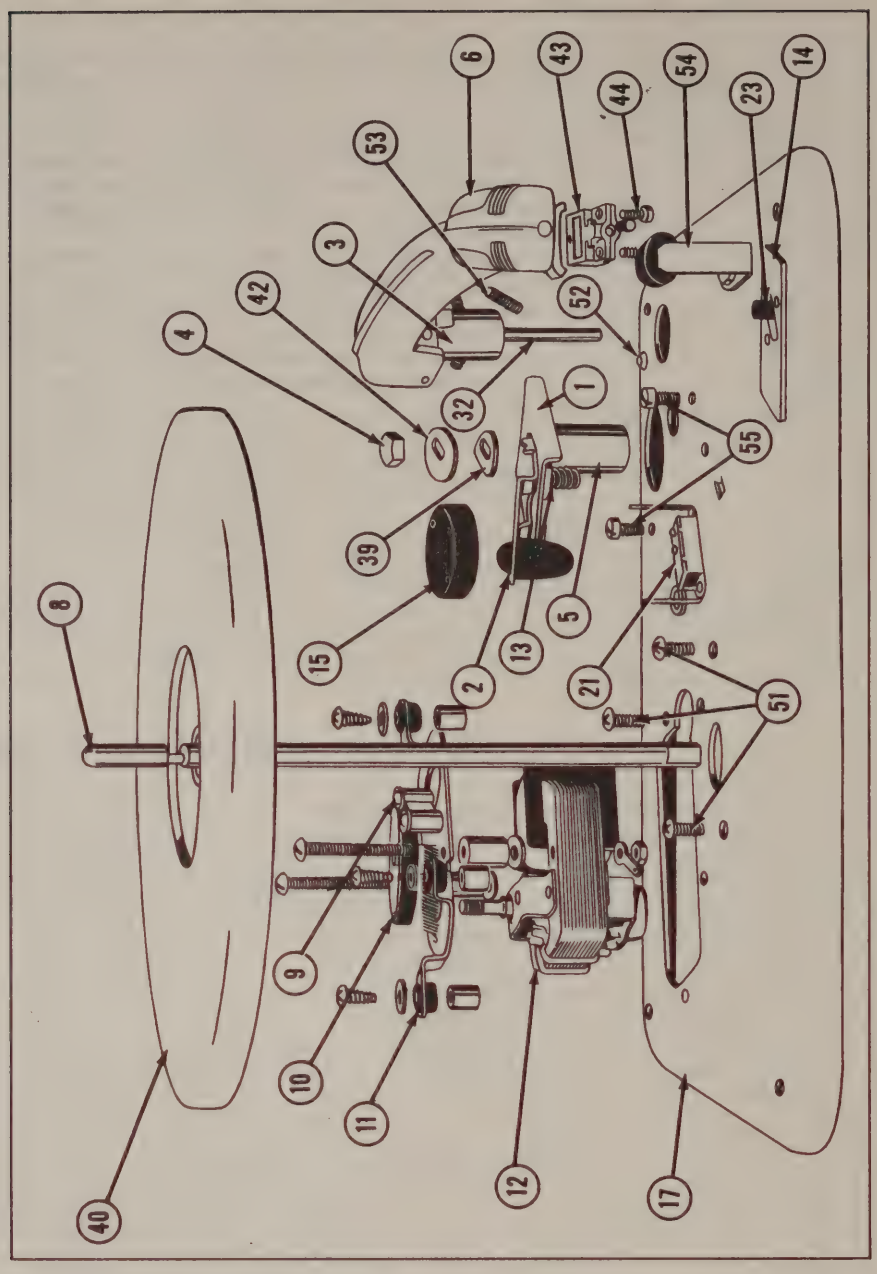
No.	Mfg. Part No.	Description
31	.....	Follower Stud, Tone Arm Trip Assembly
32	A-50500	Lift Assembly, Tone Arm
33	A-50200	Ejector Shaft Assembly
34	.....	Follower Stud, Ejector Shaft Assembly
35	.....	Index Spacer for Tone Arm
36	A-50076	Spring, Tone Arm Lead-in
37	A-50055	Spring, Ejector
38	A-50032	Spring, Index
39	A-50002	Cam, Record Ejector
40	C-50910	Turntable
41	A-25076	Set Screw
42	A-50005	Washer, Cam Cover
43	A-50802 A-50812	Crystal Pickup and Thumb Screw (or) Crystal Pickup for 550E and 550H
44	A-50804	Screw No. 4/40 x ¼
45	A-25121	Washer .625 O.D. x .375 I.D. x .010 Brass (Tone Arm Trip Assembly and Cam and Drum Assembly)
46	A-50019	Ball-Bearing, Thrust
47	A-50046	Clip
48	A-50053	Washer, Flat
49	A-50088	Washer, Felt
50	B-50181	Strut
51	BS-014D05	Screw No. 8-32 x 5/16
52	A-50035	Grommet (Tone Arm Lead)
53	A-50069	Spring, Tone Arm Counterbalance
54	B-50085-1	Rest Assembly, Tone Arm
55	BS-014B05	Screw No. 8-32 x 3/16
56	A-50136	Clip "C" (Index Arm and Tone Arm Lever Assembly)
57	.....	Index Shaft and Cam
58	BH-1A1100 B-50820 A-50803 A-50806 A-50197 A-50807 A-51163 A-50009	Tinnerman Fastener Tone Arm Assembly Insert, Crystal Pickup Lead Shielded, or Lead, Insulated Clip, Crystal Pickup Clip (Ratchet Release Assembly) Washer 5/16 O.D. x .156 I.D. x .025 brass (Ratchet Release Assembly, and Index Arm on Ejector and Tone Arm Assembly)

FUNCTION	EXPLANATION
Pickup arm (6) rises at end of record.	As the tone arm (6) nears the end of a record, lever (26), which has a serrated end, moves with the tone arm and engages trip dog (part of 25) pivoted on a release bracket (25). The eccentric groove in the record causes the tone arm (6) to oscillate. The backward motion of the tone arm (6) and lever (26) causes the trip dog to push against its pivot point, thus moving the release bracket (25) away from the cam (29). This allows the drive dog (30) on the cam (29), which has been held up by the release bracket (25), to drop down on to the drum (27) and engage one of the bosses. The cam then rotates with the drum. As cam (29) turns, the tone arm lift shaft (32) rides up an incline to a ledge on the periphery of the cam, and thus raises the tone arm (6) off the record. During most of the remainder of the cycle, the lift shaft rides this ledge, keeping the tone arm elevated. A follower stud (31) on the tone arm lever (26) is pulled into a groove on the cam (29). As the cam rotates, stud (31) follows the groove and causes the tone arm to swing out beyond the edge of the record.
Next record drops on to turntable.	The shape of the cam (29) is elliptical at one portion of the outer edge. The roller (34) attached to the ejector lever and shaft (33) follows the outside edge of the cam. As the cam revolves, the elliptical portion begins to push against the roller causing the lever (33) to move, thereby turning the shaft. This shaft extends up through a casting (7) to the record ejector shelf (5). A small record ejector cam (39) turned by shaft (33) moves the ejector plate (1) pushing a record off the shelf. As the main cam continues to revolve, the roller (34) rides around the elliptical portion of the cam (29) back to its original position, returning the lever shaft (33), small cam (39), and ejector plate (1) to their original positions.
Pickup arm lowers stylus to record.	The tone arm follower stud (31), still riding in the groove on the cam, causes the tone arm to return to a position over the outside edge of the record. The tone arm lift shaft (32) now rides down an incline from the ledge to a flat, thus lowering the tone arm (6) to the record.

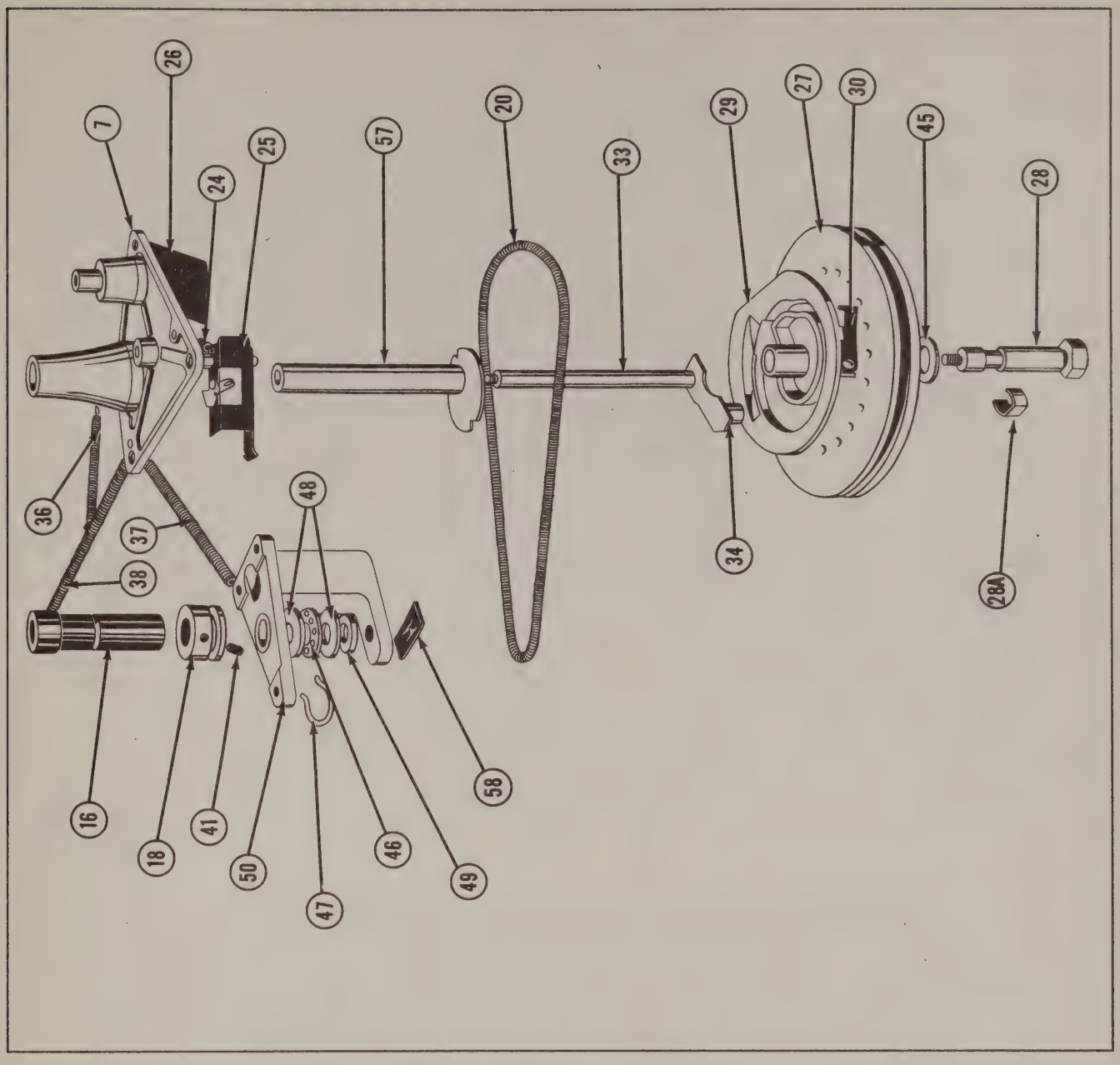
SERVICE AND ADJUSTMENTS

Before attempting to make any adjustments or replacements of parts on a changer, examine the records being used. Faulty records are frequently the source of trouble in these mechanisms. The machine will handle satisfactorily all standard 10″ and 12″ records in reasonable condition, but it cannot function properly with records that are too large or too small in diameter, too thick or too thin, or which are chipped, especially around the center hole.

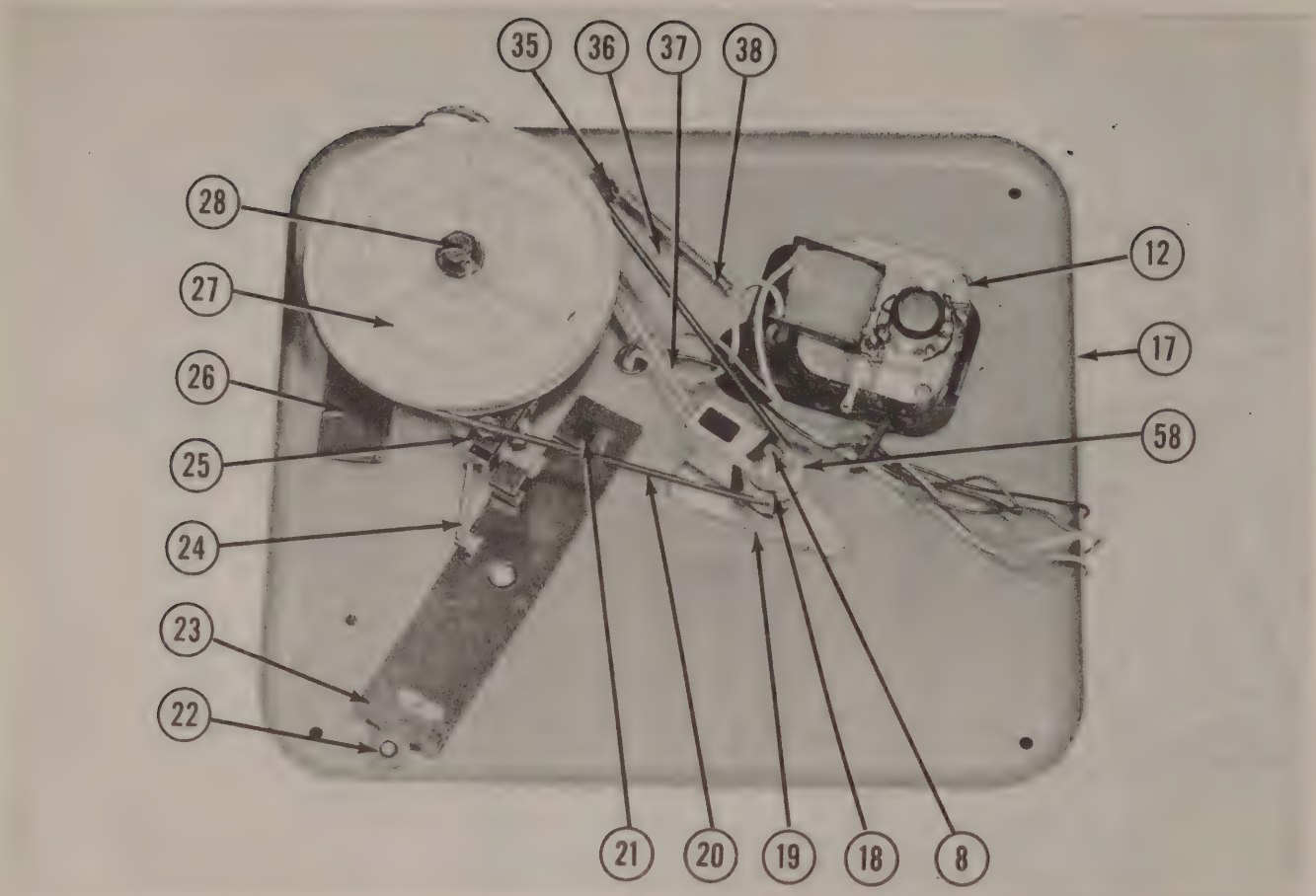
TROUBLE	CAUSE	REMEDY
Failure to cycle properly.	1. Failure of parts.	1. Check all parts and springs to see if they are in place and in good condition before attempting any adjustment. Springs may go dead, set screws may work loose, rivets may have loosened, or parts may be damaged due to external tampering.
	2. Improper lubrication.	1. Factory lubrication of this changer is adequate for the normal life of the unit. However, if it is subjected to severe operating conditions, it is well to clean and relubricate all moving parts. A fine light oil should be used on all bearing surfaces, except the main cam which should be heavily lubricated with Lubriplate 105. Avoid "gumming" the precision fitted parts. Do not apply too much or too viscous a lubricant. When removing the cam and drum assembly (27, 29), use care as the stud (28) which holds this assembly to the plate has a *left-hand thread*.
	3. Improper detent.	1. Tone arm may be in "H" detent. Put in "A" detent for automatic operation. This adjustment is on tone arm hub (3).
	4. Tone arm lead too tight.	1. Pull up tone arm lead to allow slack.
Improper landing of tone arm.	1. Improper adjustment of tone arm hub (3) on tone arm lever (26).	1. Position the record shelf (5) for 10″ records. Place a standard 10″ record on the turntable and start the change cycle. Stop the mechanism while still in cycle, just as the tone arm (6) begins its descent on to the record. At this point the tone arm follower stud (31) will still be securely held by the groove in the cam (29) thus retaining all the working parts in their correct relationship. Loosen the two set screws on the tone arm hub (3). The tone arm (6) can now be moved carefully sideways without disturbing any part of the mechanism. Push upward on the tone arm lever (26) (near the bearing) from beneath the motor board and hold it tightly against the plate. On the top insert a .005 shim between the tone arm hub (3) and the boss (7) on which it rests, to obtain the necessary clearance. Place tone arm in its correct position above the record (first groove). Tighten set screws and remove the shim. Check with several records to be sure adjustment is correct.
Pickup does not clear last record when cycling or does not lower on first record.	1. Improper adjustment of adjustment screw on tone arm lift assembly (32).	1. Set the adjustment screw and locknut on the tone arm lift assembly (32) so that the tone arm will clear a stack of records when in cycle, yet will set down properly on the first record of a stack. 2. Tone arm lift lever (32) may be bent. Straighten carefully.



TROUBLE	CAUSE	REMEDY
Record does not drop or will not stack on shelf.	1. Shelf position incorrect.	1. The shelf must be adjusted for the correct distance from the spindle as well as for correct alignment with spindle. To adjust the distance remove the turntable (40) by lifting upward. Loosen the three Phillips head screws (51) that hold the spindle assembly to the motor board (17). Remove the drive spring belt (20) from the turntable pulley bearing (18) and the drum wheel (27). With the record shelf in the 10″ position, place a standard 10″ record so that it will rest on the shelf and on the ledge on the spindle. Adjust the distance by sliding the spindle assembly toward or away from the shelf. The position should be such that the record will not fall off either the spindle or the shelf, nor jam when the ejector plate pushes it, and will fall clear of both shelf and spindle ledge when ejected. Tighten the screws and check adjustment again. Replace the turntable, being careful to push the idler wheel under the edge of the turntable. Replace the belt (20). 2. To adjust alignment, loosen the set screw beneath the 12″ shelf (narrow ledge). Have the 10″ shelf toward the spindle (8). Place a 10″ record over the spindle allowing it to rest on the spindle ledge and record shelf. Rotate the shelf slightly in either direction, to line up the record edge and the shelf. 3. Toggle plate (2) must be flipped on to records to provide proper tension on records.



TROUBLE	CAUSE	REMEDY
Changer cycles continuously.	1. Spring (24).	1. Spring (24) from release bracket (25) to tab on "On-Off" lever (23) missing or loose.
	2. Drive dog (30).	1. Drive dog (30) on cam (29) may be stuck. Relubricate and check leaf spring. Spring pressure should not exceed 2 grams.
Unit stalls when ejecting a record.	1. Weak spring belt (20).	1. Replace belt (20).
	2. Low motor torque.	1. Replace motor (12).
Stalls on change cycle.	1. Friction pad (28A).	1. File small amount from both ends of friction pad (28A) to reduce friction between cam (29) bearing and stud (28), or re-form pad to reduce friction. Do not decrease friction more than necessary.
Action of unit jerky during cycle.	1. Belt (20) damping core may be worn.	1. Replace with new belt (20).
	2. Friction pad (28A) deformed.	1. There must be a slight amount of friction at all times in the turning of cam (29). Bend friction pad (28A) for correct friction, or replace if necessary.
		CAUTION: Too much friction will cause stalling during the change cycle.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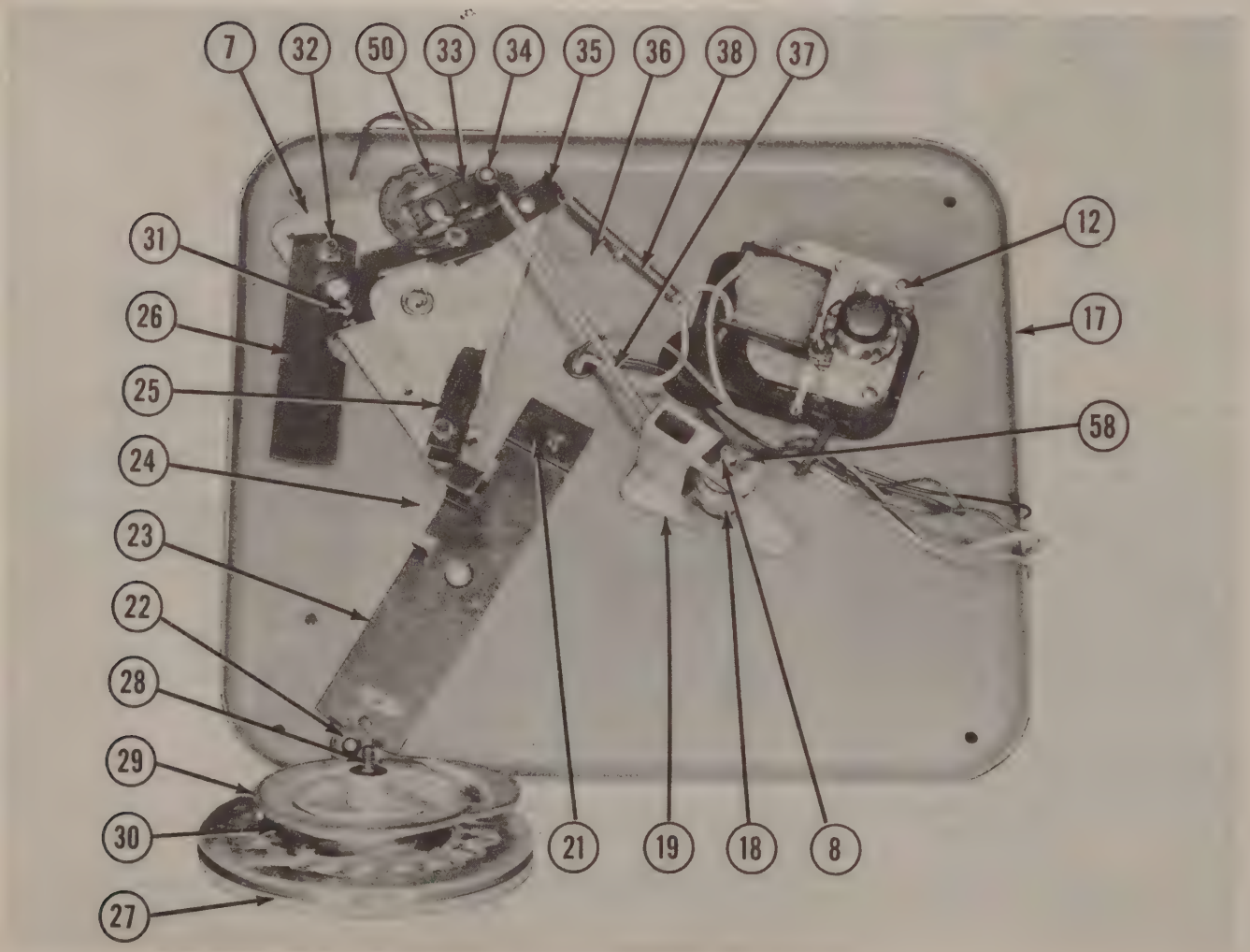
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ADMIRAL RECORD CHANGER MODEL RC200

This record changer is designed to play automatically twelve 10 inch or ten 12 inch records, not intermixed. The last record will be repeated until the changer is turned off.

OPERATING INSTRUCTIONS

To set for correct record size, turn the record support assembly so the desired number faces the turntable. Be sure to grasp the entire assembly, not just the plastic record clip. To change from 10 inch to 12 inch, rotate the assembly counterclockwise only. From 12 inch to 10 inch rotate the assembly clockwise only. The direction of rotation is indicated by the arrow nearest the centerpost.

Load the records on the centerpost and place the record clip so it rests on top of the stack. Turn the motor switch on. To start operation, press the reject button. If the arm is on the rest, this may be done by pressing down on the tone arm. The bottom record will drop to the turntable and the entire stack will be played automatically. Any record may be rejected by pressing the reject button.

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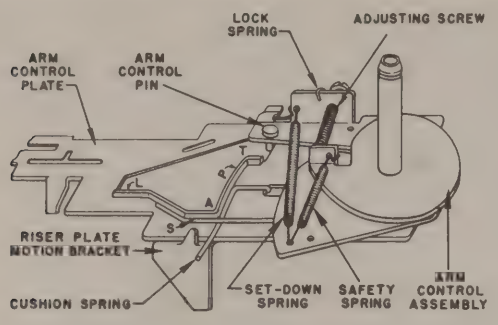
ADMIRAL
MODEL RC200

ADMIRAL
MODEL RC200



THE CHANGE CYCLE

As the pickup arm moves toward the center of the record, the arm control pin (31B) on the arm control assembly (31) moves along the portion of the arm control track shown as "P." As the arm reaches the trip point at the end of the record, the arm control pin reaches the point on the track designated as "T." As the pin moves into this recessed portion, the trip spring (37) is allowed to move the arm control plate (38) forward toward the centerpost. Thus the stop tab (38C) is moved from behind the reject catch (44). This allows the eccentric cam (46) to be pulled over by the spring (65) until the rubber tire makes contact with the knurled roller (63) on the turntable shaft. This knurled roller, which rotates with the turntable, rotates the eccentric cam. Since the eccentric cam is attached to the riser plate (40), the riser plate is forced back along the guide rods (61) away from the centerpost.

When the riser plate begins to move, the push-off cam and shaft assembly (42) rides along the inclined track (40A) of the riser plate. This causes the push-off cam and shaft assembly to be drawn downward. As a result the pickup arm lift (17) presses down on the arm lift bearing pin (16) causing the pickup arm to be raised clear of the record.

The riser plate tab (40C) now contacts and moves the arm control assembly (31) which moves the pick-up arm away from the centerpost and clear of the edge of the turntable. As the riser plate continues to move back along the guide rods the riser plate motion bracket (40B) contacts and rotates the push-off cam and shaft assembly. This causes push-off arm (4) to rotate, moving push plate (6B), which pushes a record off the bottom of the stack.

During the second half of the change cycle the pressure of the push plate spring (5) returns the push plate and the push-off arm to their normal positions. At the same time the motion of the eccentric cam and the pressure of the guide rod recoil spring (41) move the riser plate (40) back toward the centerpost. The arm control assembly and pickup arm are moved back by the tension of the set-down spring (34). After the arm reaches a point directly over the set-down point, the riser plate has moved far enough back toward the centerpost to allow the push-off cam and shaft assembly to ride down the inclined track of the riser plate. This lowers the pickup arm on to the record.

As the eccentric cam completes its revolution, aided by the eccentric cam spring (65), the rubber tire of the cam moves away from the knurled roller on the turntable shaft. The reject catch (44) than comes to rest against both the stop tab (38C) and the reject arm (60). This completes the change cycle.

REJECTING A RECORD

When the reject button (29) is pressed, the reject trigger wire (54) pulls the reject arm (60) from behind reject catch (44). The eccentric cam then falls against the knurled roller and the change cycle begins.

DETERMINATION OF SET-DOWN POINT

During the early part of the change cycle, the arm control plate (38) moves in a direction away from the centerpost until the size change stop (38A) reaches the push-off cam. The distance travelled depends on the setting of the push-off cam. For the 12 inch setting the push-off cam presents its long radius to the size change stop. For the 10 inch setting the short radius of the push-off cam faces the size change stop. This means that the arm control track will move farther for the 10 inch setting than for the 12 inch setting.. As a result, the arm control pin (31B) will ride along the "L" portion of the track for the 10 inch setting, and along the "S" portion for the 12 inch setting.

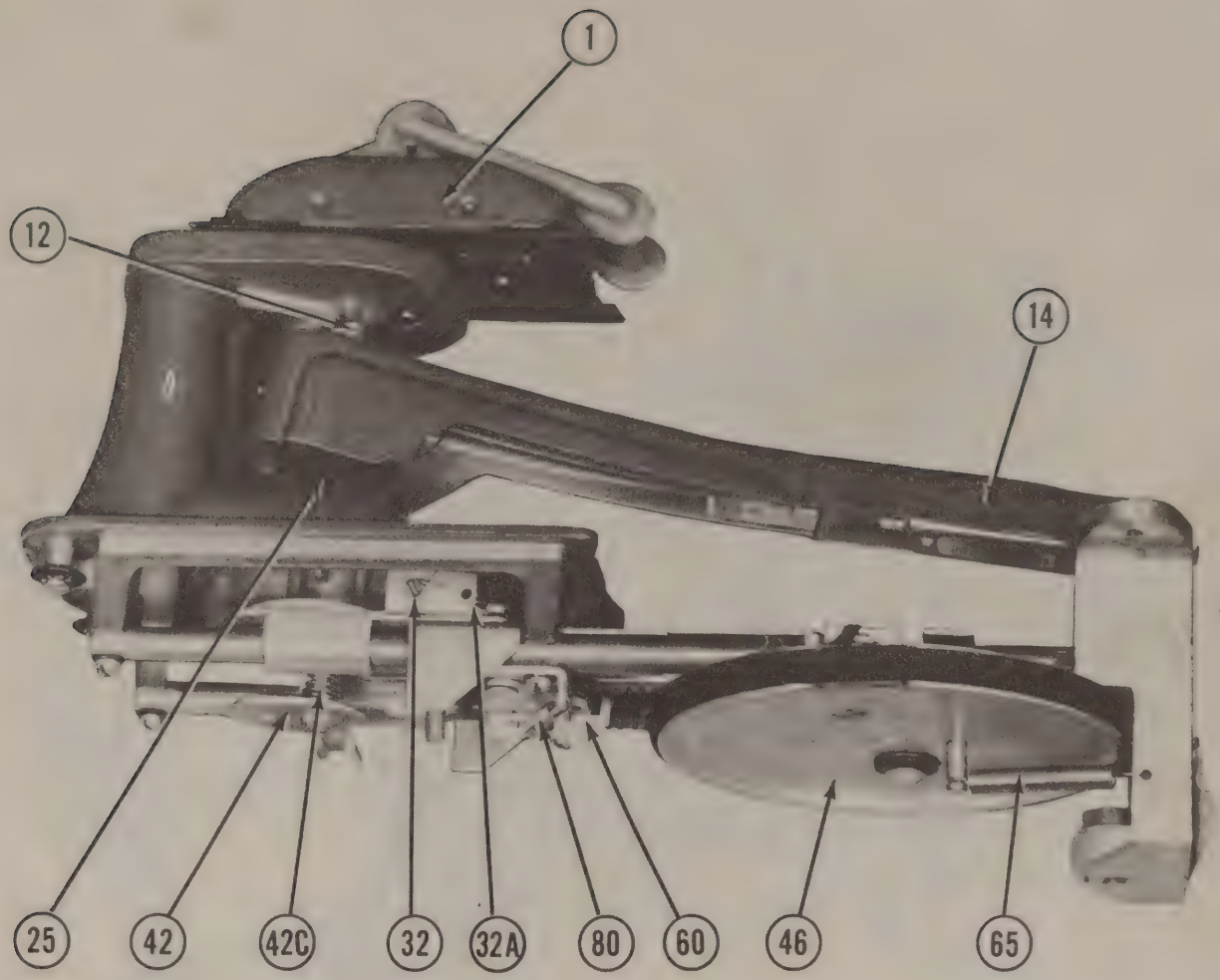
As the pick-up arm moves back toward the record during the second half of the cycle, it will be stopped when the bracket (31C) reaches the adjusting screw (32). How far the arm moves before being stopped depends on whether the arm control pin has been riding on the "S" or the "L" portion of the arm control track.

ADJUSTING SET-DOWN AND TRIP POINTS

This changer is designed so the 10 inch and 12 inch set-down points and the trip point are all adjusted simultaneously. This adjustment is made by means of the adjusting screw (32). Turning this screw counter-clockwise will cause the pickup arm to set down closer to the centerpost. Clockwise rotation will move the set-down point farther away from the centerpost. One complete turn moves the arm about 1/4 inch. If the adjusting screw will not change the setting enough, the pickup arm support may be out of position.

The set-down points will be slightly different for straight shank and offset shank needles. If possible the set-down point should be adjusted with the type needle which the customer will use. In this case, the measurement from the side of the centerpost to the needle should be 4 21/32" for the 10 inch set-down point, 5 21/32" for the 12 inch set-down point, and 1 5/8" for the trip point. It is recommended that the adjustment be made at one of the set-down points, rather than at the trip point.

If it is not known which type of needle will be used, a compromise adjustment may be made with a straight shank needle by adjusting to 4 5/8" for the 10 inch setting, or 5 5/8" for the 12 inch setting.



CHANGER MECHANISM—REAR VIEW

RE-POSITIONING PICKUP ARM SUPPORT ASSEMBLY

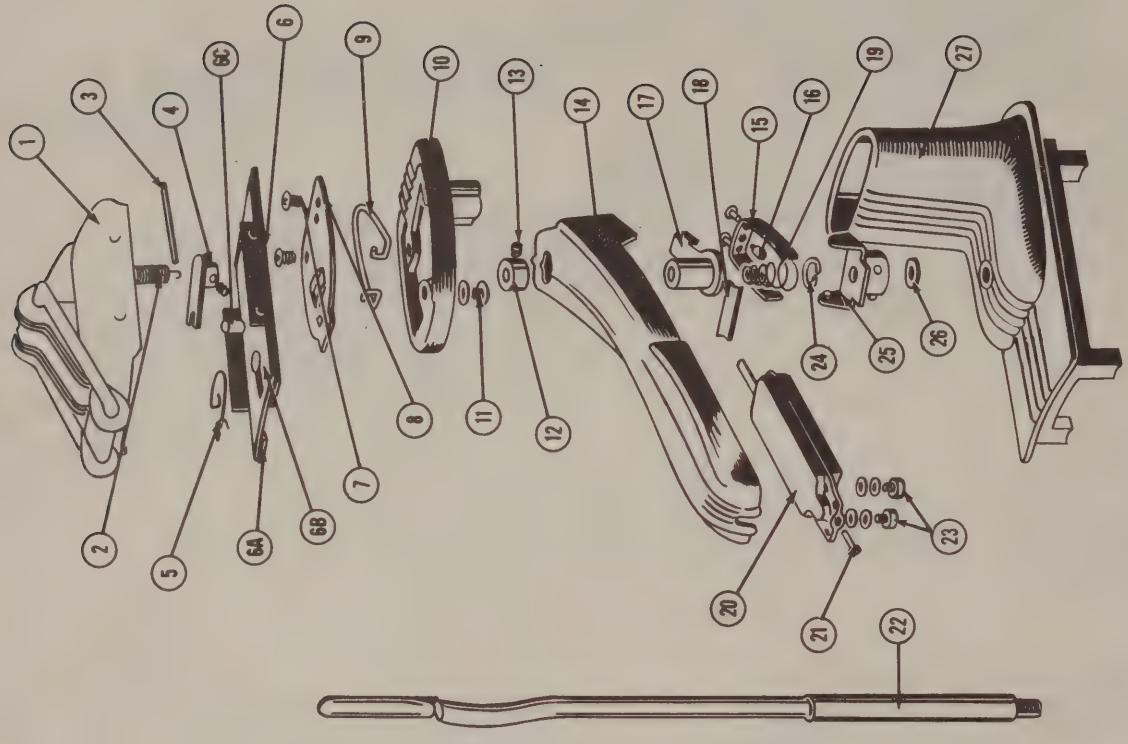
If the pickup arm support assembly (25) has been removed, or if its set screws are loose, re-position as follows:

1. Turn adjusting screw (32) as far clockwise as it will go; then back it off two complete turns. If this screw (32) is headless, it may be turned until the bottom of the screw-driver slot is flush with the lock spring, then backed off two turns.
2. Place a 12″ record on the turntable.
3. With the changer out of cycle, manually move the arm control assembly (31) outward as far as it moves freely. In this position, the arm control pin (31B) will be located as indicated at "A."
4. Place the pickup arm so that the needle rests in the first playing groove on the 12 inch record.
5. Tighten the two set screws in the pickup arm support assembly (25).
6. Make the final set-down adjustments as described in the paragraph on adjusting set-down and trip points.

RE-POSITIONING PUSH-OFF ARM

If push-off arm (4) has been removed, or if its set screws are loose, it may be adjusted as follows:

1. Rotate the record support to the 10 inch position. Remove push-off arm (4).
2. Manually slide the push plate (6B) over the rotating plate (6A) until a piece of metal 3/32″ in diameter or a No. 8-32 Bristo wrench can be inserted into the opening at the front of the center slot in the push plate. If this procedure does not give the proper setting for both 10″ and 12″ records, vary the spacing slightly and repeat the procedure.
3. Put the changer in cycle and manually rotate the turntable until the riser plate (40) has travelled along the guide rods to a position farthest away from the centerpost.
4. Position the push-off cam and shaft assembly (42) so that it is held tightly against the riser plate motion bracket.
5. Put the push-off arm in position, leaving about about 1/16″ clearance between the top of the push plate and the push-off arm.
6. Tighten the set screws in the push-off arm.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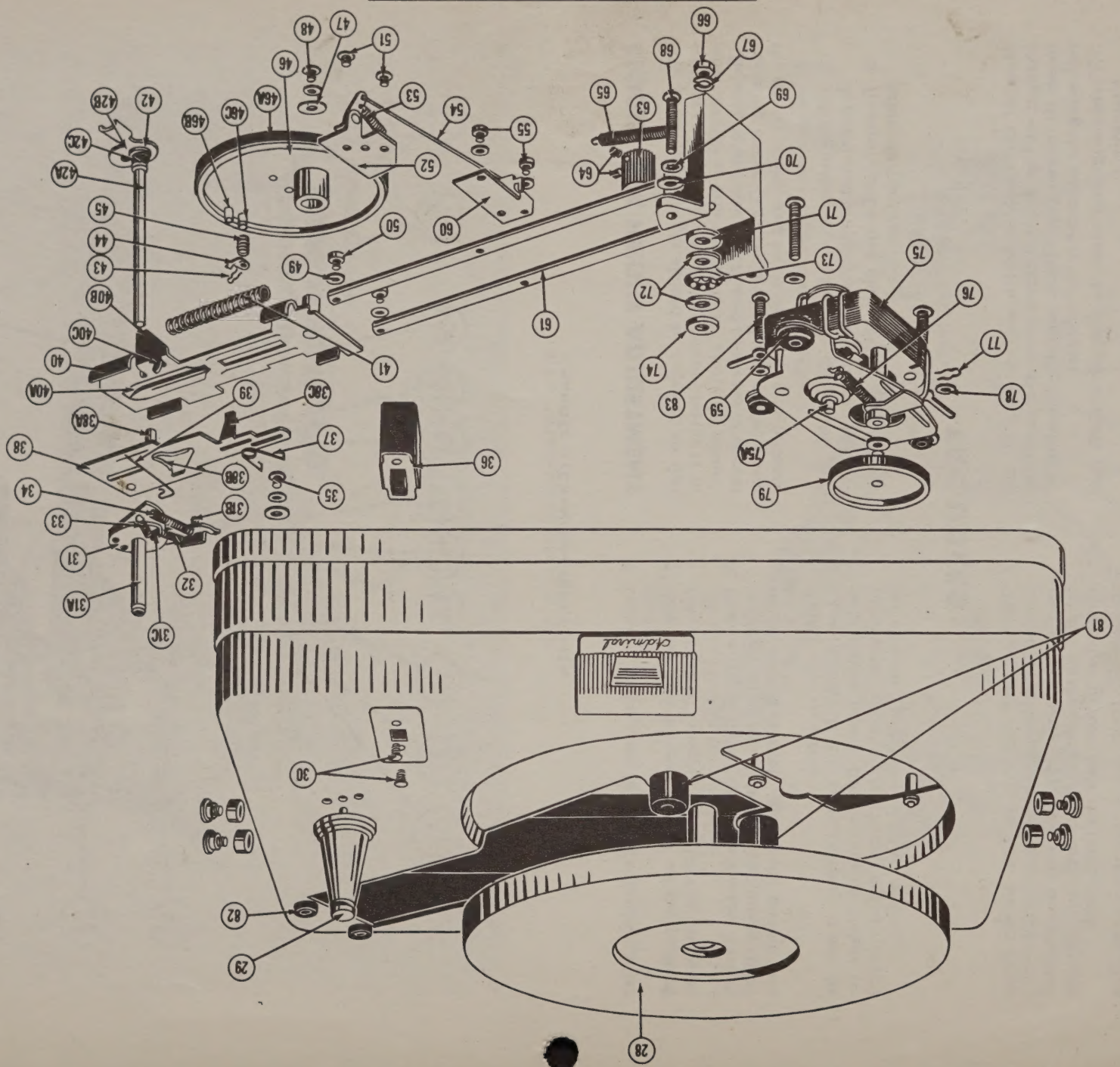
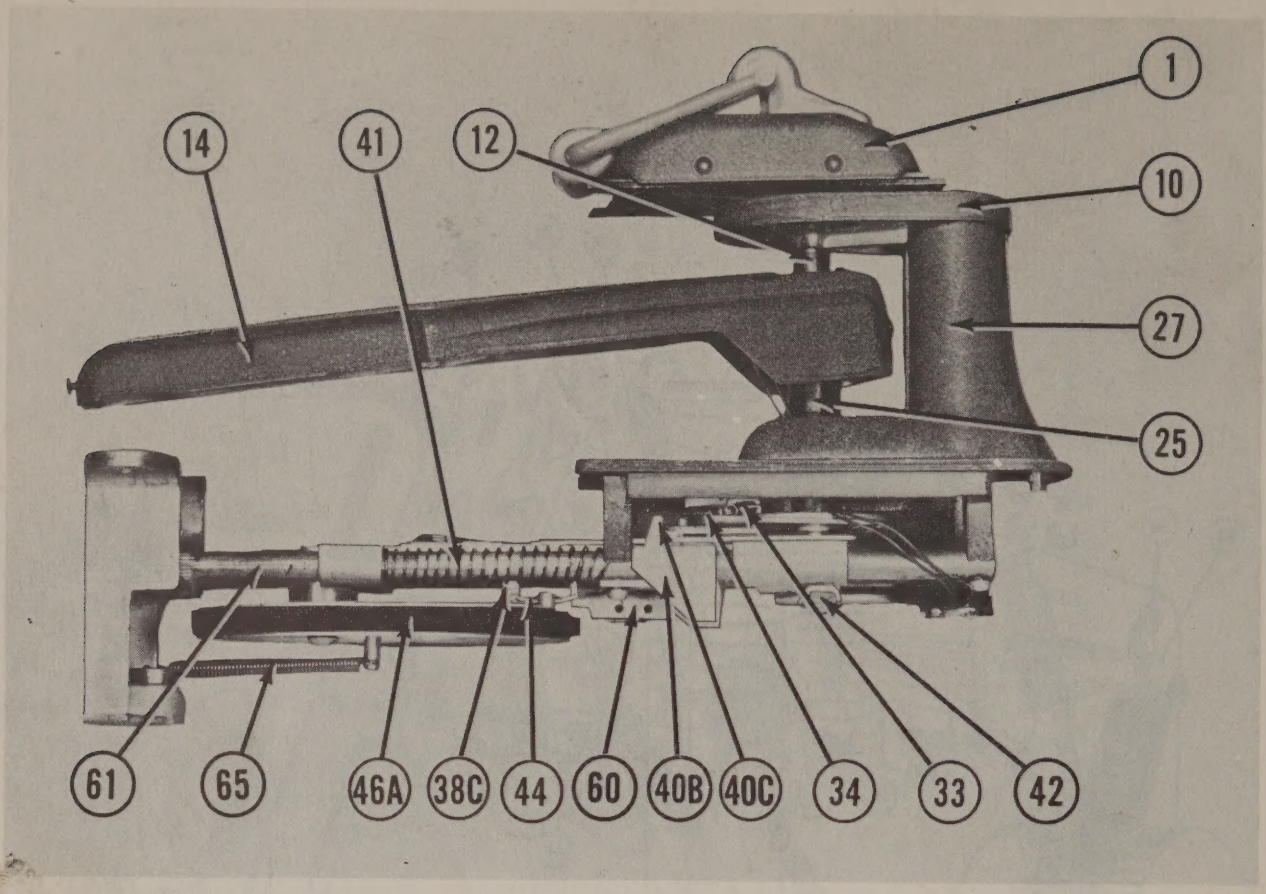




CHANGER MECHANISM—FRONT VIEW

PICKUP ARM HEIGHT ADJUSTMENT

The pickup arm height should be adjusted so that without a needle and with a single record on the turntable the pickup arm will be 1/32″ above the record. The arm height may be adjusted by means of the lift adjusting collar (12). As the collar is moved down the arm is raised, and vice-versa. Adjust as follows:

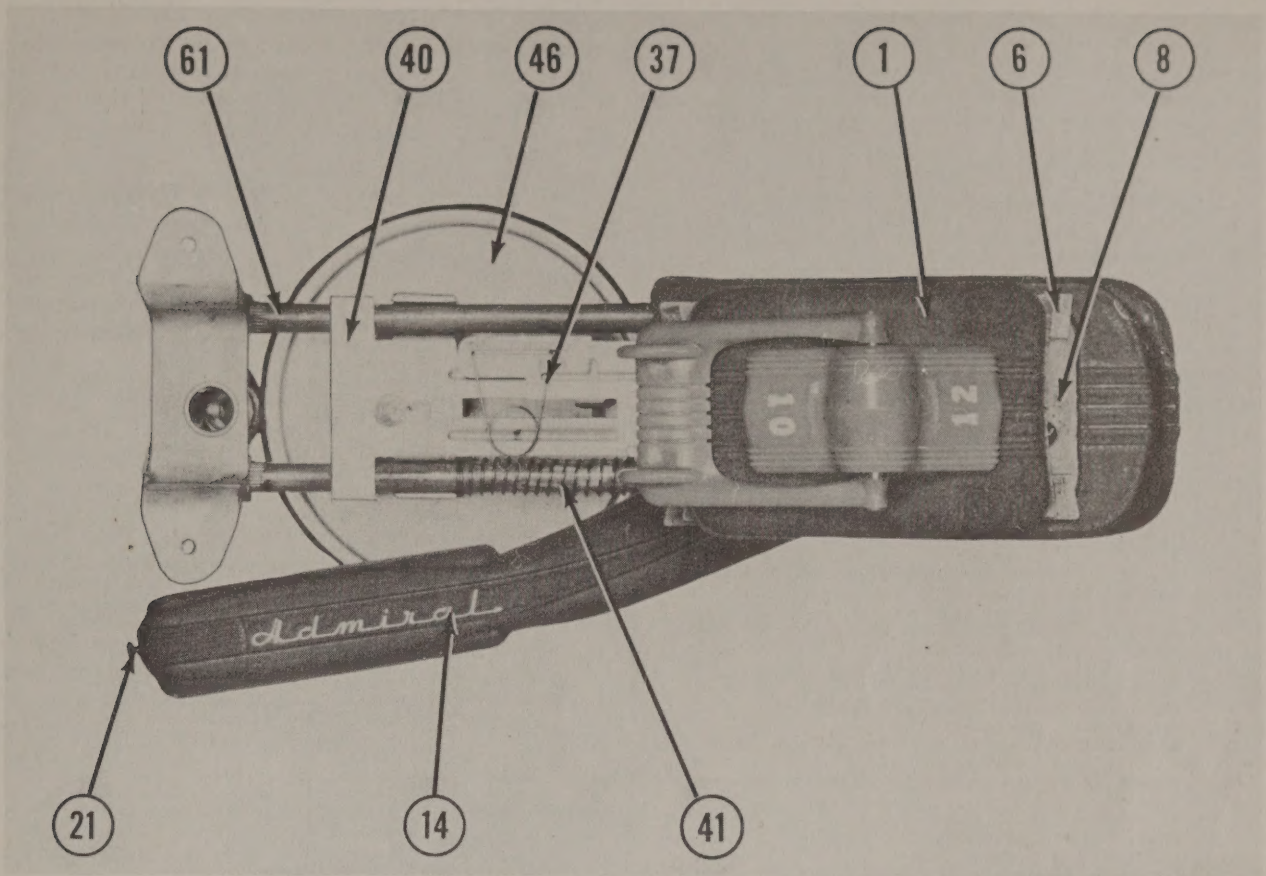
1. Be sure the changer is out of cycle.
2. Lift the pickup arm and be sure the arm lift (17) is positioned properly over the lift pin (16).
3. Remove needle and place pickup on the turntable near its edge.
4. Loosen the set screw in the lift adjusting collar (12).
5. Remove slack by pushing up on the push-off cam and shaft assembly (42). Do not compress the arm lift shaft spring (42C).
6. Place a No. 6-32 Bristo head set screw wrench in the set screw and slide the lift adjusting collar down until it is snug against the pickup arm lift (17).
7. Tighten the set screw.
8. Check height. If it is still incorrect, it may be necessary to repeat the adjustments. Before repeating the adjustments, check the shaft (42A) for nicks and burrs caused by set screws.

TROUBLES

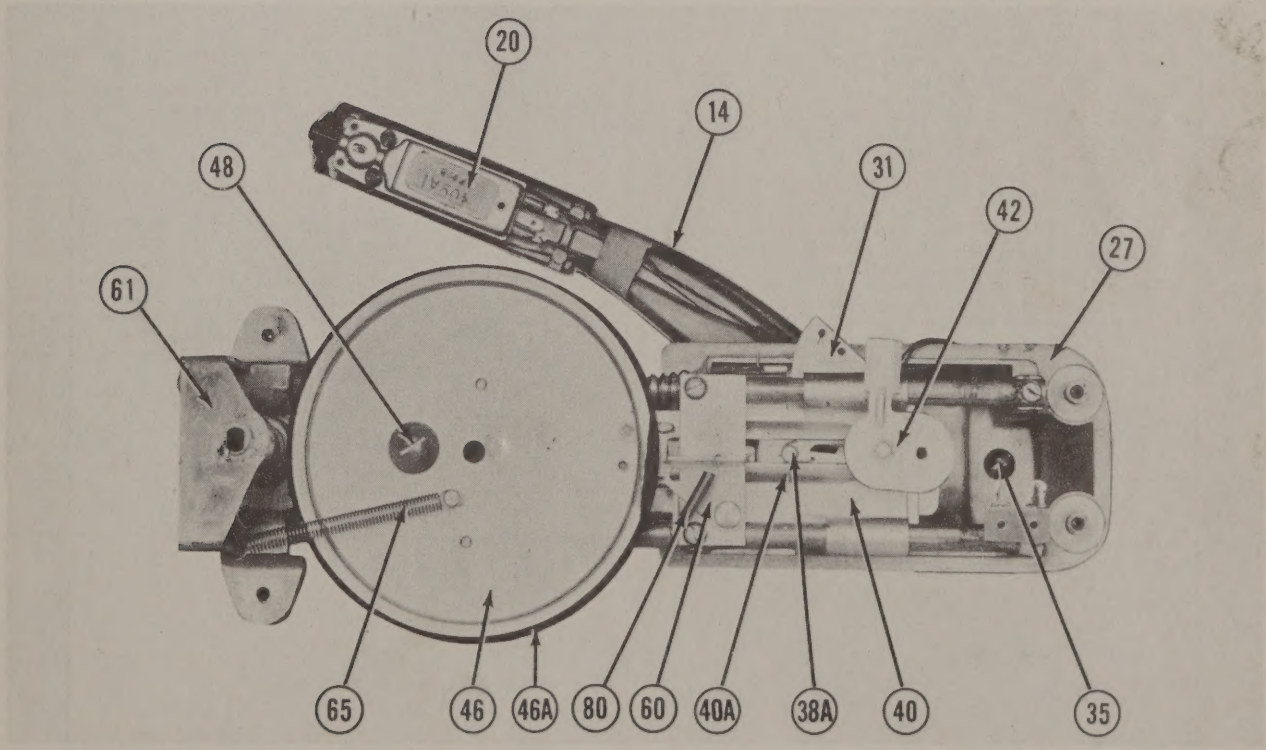
Most of the troubles which may develop in this changer will be due to faulty adjustments caused by loose set screws, etc. These may be remedied by following the adjustment instructions.

Three things may cause the changer to cycle continuously:

1. The mounting screw (48) on eccentric cam (46) may be loose.
2. The eccentric cam may be bent so the reject catch (44) passes underneath the stop tab (38C) or the reject arm (60). This may be remedied by putting the changer out of cycle and pressing upward on the cam near the reject catch.
3. Trigger wire (54) may be too short or hooked incorrectly, thus keeping reject arm (60) pulled over.



CHANGER MECHANISM—TOP VIEW



CHANGER MECHANISM—BOTTOM VIEW

PARTS LIST

Ref. No.	Admiral Part Number	Description
1	G400A128	Cover Assembly (includes 2 and 3)
2	405A4	Spring, Record Clip
3	414A4	Spring Rod (Record Clip)
4	G400A66	Push-off Arm Assembly
	1A44-38	Set Screw (Bristo Head No. 6-32 x 3/16", Cone tip)
5	405A38	Spring, Push Plate
6	G400B70	Head Assembly (includes 5)
6A	.....	Rotating Plate
6B	.....	Push Plate
6C	.....	Push Plate Pin
7	61-312-C2-47	Screw (F.H.M.S. No. 6-32 x 5/16")
8	401A64	Head Mounting Plate
9	405B18	Spring, Head Mounting Plate
10	404B9	Base Head
11	65-375-C2-47	Screw (R.H.M.S. No. 6-32 x 3/8")
12	402A66	Lift Adjusting Collar
13	1A44-7	Set Screw (Bristo Head No. 6-32 x 1/8", Cup Tip)
14	G400A130	Pickup Arm, Pivot Spring, and Arm Lift Bearing Pin Assembly (does not include 18 or 20)
15		Pivot Spring — Part of 14, may be obtained
16		Arm Lift Bearing Pin — separately as Part No. 98A1
17	G400A86	Pickup Arm Lift Assembly
18	405A13	Spring Clip (Pickup Arm)
19	405A46	Brake Spring (5 turns)
20	409A3	Pickup Cartridge — Interchangeable
	409A2	Pickup Cartridge — Interchangeable
	409A1	Pickup Cartridge — Interchangeable
21	402A43	Needle Screw For Cartridge
22	G400A12-2	Centerpost
23	42-250-C2-47	Screw (Fil. H.M.S. No. 4-40 x 1/4", for Mounting Cartridge)
24	405A37	Retaining Ring (Fits on Arm Support Tube 31A)
25	G400A73	Pickup Arm Support Assembly
26	405A27	Spring Washer
27	404C8	Base (Die Cast)
28	G400B49	Turntable
29	G400A46-1	Reject Button and Arm Rest (For Metal Base)
	G400A46-2	Reject Button and Arm Rest (For Wood or Plastic Base)
30	.....	Mounting Screws for Switch Assembly
31	G400A84	Arm Control Assembly
31A	.....	Arm Support Tube (Part of 31)
31B	.....	Arm Control Pin (Part of 31)
31C	.....	Bracket (Part of 31)
32	402A60	Adjusting Screw
	405A44	Lock Spring for 32
33	405A41	Safety Spring
34	405A49	Set-Down Spring
35	100-437-C2-47	Screw (R.H.M.S. No. 10-24 x 7/16")
36	.....	On-Off Switch
37	405A43	Trip Spring
38	G400A125	Arm Control Plate (includes 39)
38A	.....	Size Change Stop (Part of 38)
38B	.....	Track (Part of 38)
38C	.....	Stop Tab (Part of 38)
39	405A45	Cushion Spring (Part of 38)
40	G400A88	Riser Plate Assembly
40A	.....	Inclined Track (Part of 40)
40B	.....	Riser Plate Motion Bracket (Part of 40)
40C	.....	Riser Plate Tab (Part of 40)
41	405A9	Recoil Spring
42	G400A98	Push-off Cam and Shaft Assembly
42A	.....	Arm Lift Shaft (Part of 42)
42B	.....	Push-off Cam (Part of 42)
42C	.....	Arm Lift Shaft Spring (Part of 42)
43	405A15	Hairpin Spring
44	401A97	Reject Catch
45	405A50	Reject Catch Support Spring
46	G400A117	Eccentric Cam and Tire Assembly
46A	406A1	Rubber Tire, Eccentric Cam
46B	.....	Reject Catch Stop (Part of 46)
46C	.....	Reject Catch Pivot Stud (Part of 46)
47	4B1-57-47	Flat Washer (Eccentric Cam)

Ref. No.	Admiral Part Number	Description
48	84-250-C2-21	Screw (R.M.H.S. No. 8-32 x 1/4", for Mounting Cam)
49	.....	Flat Washer
50	62-500-C2-21	Screw (Fil. H.M.S. No. 6-32 x 1/4" for Mounting Guide Rods)
	1A20-14-21	Screw (No. 6-3/8" Drive Screw, Mtg. Reject Lever on Metal Base)
51	1A20-18-21	Screw (No. 6-7/8" Drive Screw, Mtg. on Wood or Plastic Base)
52	G400A115	Reject Lever Assembly
53	405A25	Reject Lever Spring
54	414A12	Reject Trigger Wire
55	62-500-C2-21	Screw (Fil. H.M.S. No. 6-32 x 1/4")
56	4B1-36-47	Flat Washer
57	29A2-6-21	Spacer, Mounting (Used with Wood or Plastic Base)
	60-250-C2-47	Screw (R.H.M.S. No. 6-32 x 1/4", Used for mounting on Metal Base)
58	260-687-C2-2	Screw (R.H.M.S. Sems. No. 6-32 x 11/16", for Wood or Plastic Base)
	406A4	Rubber Grommet (Used with Motors 407B3 or 407B4)
59	406A9	Rubber Grommet (Used with 407B1)
	406A10	Rubber Grommet (Used with 407B2)
60	G400A116	Reject Mounting Plate and Arm Assembly
61	G400A111	Turntable Mounting and Guide Rod Assembly
62	401A53	Spacer, Grommet (Used with Motors 407B3 or 407B4)
	402A44	Spacer, Grommet (Used with 407B1)
	402A45	Spacer, Grommet (Used with 407B2)
63	402A62	Knurled Roller, Turntable Shaft
64	1A44-13	Set Screw (Bristo No. 8-32 x 1/8", for Knurled Roller)
65	405A47	Spring, Eccentric Cam
66	402A41	Hex Nut (1/4"-20, Used on Centerpost)
67	3A2-9-47	Lockwasher, Split (1/4" Diameter)
	80-875-C2-47	Screw (R.H.M.S. No. 8-32 x 7/8", for Metal Base)
68	280-875-C2-2	Screw (R.H.M.S. Sems No. 8-32 x 7/8", Wood or Plastic Base)
69	.....	Lockwasher
70	.....	Flat Washer
71	412A9	Cork Washer (3/64" Thick)
72	415A2	Washer — Replace as an Assembly
73		Bearing — Replace as an Assembly
74	412A1	Cork Washer (3/32" Thick)
	407B1	Motor, Complete with Idler Wheel; 105-125 volts,
75	407B2	60 cycle (407B1, 407B2, and 407B3 are inter-
	407B3	changeable)
	407B4	Motor and Idler Wheel for 50 cycles.
75A	401A48	Drive Pulley (Part of 60. For 407B3 and 407B4 Only. In addition 407B4 Includes Coil Spring Part Number 405A32).
	405A14	Spring, Idler Wheel (For Motors 407B3 or 407B4)
76	405A35	Spring, Idler Wheel (For Motor 407B1)
	405A36	Spring, Idler Wheel (For Motor 407B2)
77	405A15	Hairpin Spring
78	.....	Flat Washer
	G400A23	Idler Wheel Assembly (For Motors 407B3 or 407B4)
79	G400A57	Idler Wheel Assembly (For Motor 407B1)
	G400A59	Idler Wheel Assembly (For Motor 407B2)
80	405A25	Reject Arm Spring
81	406A5	Rubber Grommet (Used with Metal Base)
	406A2	Rubber Grommet (Used with Wood or Plastic Base)
82	406A6	Rubber Grommet (Small—Used with Metal Base)
	406A2	Rubber Grommet (Used with wood or Plastic Base)
	60-312-C2-2	Screw R.H.M.S. No. 6-32 x 5/16", Mtg. Motor on Metal Base
83	60-1125-C2-21	Screw R.H.M.S. No. 6-32 x 1 1/8"—Used with Wood or Plastic Base)
84	402A36	Mounting Spacer (Used with Metal Base)
	29A2-4-21	Mounting Spacer (Used with Wood or Plastic Base)
	405A30	50 Cycle Conversion Spring (For Motor 407B1)
	405A31	50 Cycle Conversion Spring (For Motor 407B2)
	405A32	50 Cycle Conversion Spring (For Motor 407B3)